MASTER PLAN

BLACK RIVER STATE FOREST

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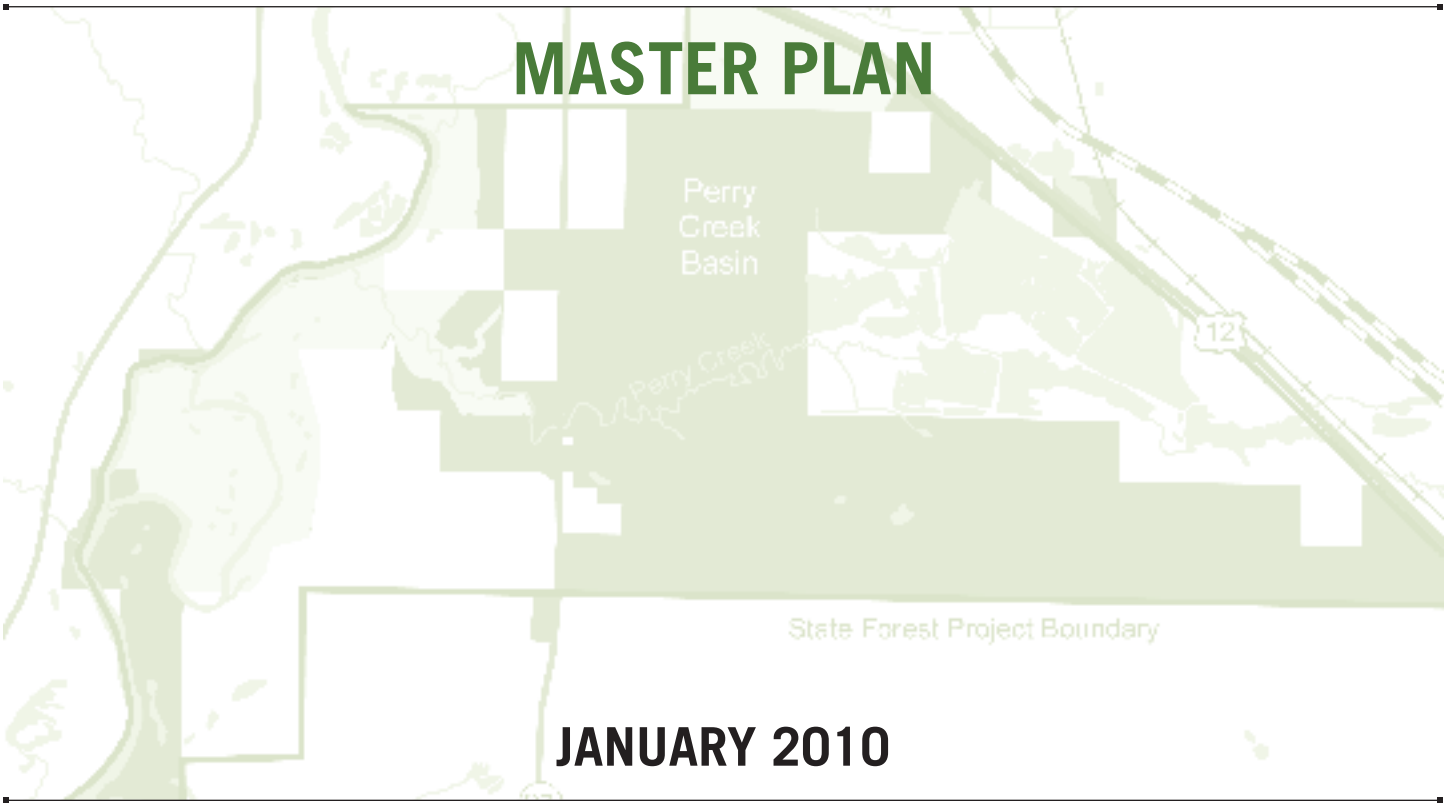

JANUARY 2010

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STATE FOREST

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WISCONSIN
DEPT. OF NATURAL RESOURCES

ACKNOWLEDGEMENTS

This plan has been developed through a team effort by many individuals from the Department of Natural Resources. Through their hard work and expertise, these people have developed a plan that will guide the Black River State Forest into the future.

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INTRODUCTION AND PLAN OVERVIEW

The Black River State Forest, comprised of over 68,000 acres in Jackson and Clark Counties, protects a wide variety of forest resources and important habitat areas. Forest management areas provide a large land base for sustainable timber production, while several native community management areas and State Natural Areas on the site protect important ecological communities and species.

Forest communities on the Black River State Forest are diverse and include common Wisconsin oak and pine communities, as well as a number of rare and unique forest communities such as white pine-red maple swamps, pine and oak barrens, central poor fen, tamarack-black spruce swamp, and moist cliff. The property provides raw materials for Wisconsin's forestry industry, offers a model for sustainable forest management, and protects unique ecological communities and habitat for wildlife.

All management on the Black River State Forest is implemented using principles of sustainable forestry. The Black River State Forest harvests between 700 to 1,600 acres annually yielding, on average, approximately 15,000 cord equivalents. Forest management on the state forest is intended to provide economic, ecological, and social benefits to present and future generations.

Ecologically, the Black River State Forest supports a wide range of plant and animal species, some of which are rare, endangered, or threatened. As of 2006, the Natural Heritage Inventory documented 48 rare plant species and 119 rare animal species within a study area that encompasses the Black River State Forest and the surrounding Meadow Valley landscape. Of the 119 rare animal species, at least 25% of their known statewide occurrence is within this study area.

The Black River corridor, its tributaries, and an extensive dike and dam network on the property support a diverse range of common and rare species, and offer recreational opportunities.

Recreation on the property is diverse and supports a wide range of uses. The Black River, East Fork of the Black River, and various flowages on the property offer opportunities for fishing and canoeing. Recreational trails provide space for ATV riding, snowmobiling, bicycling, cross-country skiing, hiking, and horseback riding. Motorized trails on the property connect to a large system of regional trails, providing visitors with numerous recreational opportunities. Over 100 campsites on the property welcome visitors. Hunting is one of the most popular activities on the state forest, with seasons open for whitetail deer, turkey, grouse, bear and small game. The Black River State Forest and the Jackson County Forest are two of the largest tracts of open hunting land in the southern half of the state and attract a large number of hunters annually.

PURPOSE OF THE MASTER PLAN

The Black River State Forest Master Plan spells out how the property will be managed, used and developed, and the benefits it will provide. It defines the forest management practices, recreational uses, other land management activities, and additional aspects of the propertyís future use and development.

The Black River State Forest Master Plan:

- Provides a vision and framework for the use, development, management and acquisition of the forest well into the future with an emphasis on the next 15 years.
- Identifies land management areas and plans for their future management.
- Describes general and specific management objectives and prescriptions for each management area.
- Makes recommendations for forest production, recreation, and habitat conservation to meet current and future needs.
- Provides for continuing public involvement during plan implementation.

OVERVIEW OF THE PLANNING PROCESS

There are several major phases in the master planning process as well as opportunity for public input and participation. These phases include completing the Regional and Property Analysis, establishing the property vision and goals, considering management alternatives, and finally creating a plan and an environmental analysis.

The Department of Natural Resources worked actively with local towns, tribes, non-governmental organizations, citizens, and businesses to create the Black River State Forest Master Plan. The planning process is guided by State Statute 28.04 and Wisconsin Administrative code NR 44.

The development of the Black River State Forest Master Plan has also been guided by a commitment to sustainable forestry. Forest practices have addressed aspects of sustainability for decades, but "sustainable forestry" is a relatively new concept. While individual definitions may vary slightly, there is general agreement that sustainable forestry focuses on meeting the environmental, economic, recreational and social needs of current generations while protecting the forestís ability to fill the same role for future generations. Additionally, the previous property plan and extensive ecological, economic, and social assessments provided a data foundation for the development of this plan.

Public involvement has been an integral part of the planning process, beginning with public open house meetings and surveys to identify important planning issues and views on the forestís future direction. That involvement continued through the other steps in the process, developing a vision statement and property goals, evaluating management alternatives, and developing the Preferred Alternative and Options. This planning process culminates with the public review of the Master Plan and Environmental Analysis followed by plan review and approval by the Natural Resources Board.

PLAN CONTENT AND ORGANIZATION

The master plan is presented in three chapters:

Chapter One Overview of the forest, the purpose of the master plan, and a planning process overview.

Chapter Two Use and development of the property.

Chapter Three Background information on the region and the property.

NEED TO REVISE THE BLACK RIVER STATE FOREST MASTER PLAN

The last master plan for the Black River State Forest was approved in 1983. The Department determined the need to revise the plan in light of changing ecological, economic, and social conditions, to incorporate new information learned since that time and to consider management in context of the larger landscape in which the forest is located as required by Wisconsin State Statute 28.04. This plan will receive a formal, rigorous review approximately every 15 years. When necessary, the plan may also be updated by plan amendments and variances through a formal process that includes public involvement.

OVERVIEW OF THE PLAN

Land Management Areas

The Black River State Forest has been divided into 19 Land Management Areas: three Forest Production Management Areas, two Habitat Management Areas, 12 Native Community Management Areas, and two Recreation Management Areas. Within the designated Land Management Areas, there are 10 State Natural Areas; nine located within Native Community Management Areas and one within a designated Recreation Area.

Each management area describes a unique landscape or management focus that considers soils, topography, community type, and other factors which shape the management for each area. Each management area has specific short- and long-term objectives that articulate the future desired condition based on the ecological capabilities of the area and other factors. Because forests and landscapes change slowly, actions taken, or not taken, over the next 15 years may require 50-100 years to affect the forest as a whole. Short descriptions of the different types of management areas are below.

Forest Production

The general management objective for forest production management areas is the sustainable production of timber and other forest products. However, forest production areas also meet a wide range of ecological and recreation objectives. In these cases, management practices are modified to be compatible with and support these multiple objectives.

Forest Production Management Areas..... 46,586 acres

Area 1: Perry Creek Basin..... 3,038 acres

Area 2: Morrison and Levis Creek Basin ..... 29,350 acres

Area 3: Robinson Creek Basin..... 14,198 acres

Habitat Management

The management objective of habitat management areas is to provide or enhance habitat, whether upland, wetland or aquatic, to support specific species of plants or animals.

Habitat Management Areas..... 9,276 acres

Area 4: Jack Pine..... 4,277 acres

Area 5: Dike 17 Wildlife..... 4,999 acres

Native Community Management
The primary management objective for native community management areas is the representation, restoration and perpetuation of native plant and animal communities, whether upland, wetland or aquatic, and other aspects of native biological diversity. Management activities are designed to achieve land management objectives through natural processes whenever possible. Only those areas of highest value for protection or community restoration were selected.

Native Community Management Areas ..... 9,979 acres

Area 6: Upper Black River*..... 1,909 acres

Area 7: Arbutus Oaks* ..... 215 acres

Area 8: Castle Mound Pine Forest*..... 171 acres

Area 9: East Fork of the Black River* ..... 1,083 acres

Area 10: Ketchum Creek Headwaters* ..... 581 acres

Area 11: Paradise Valley Pines..... 669 acres

Area 12: Peatlands*..... 1,203 acres

Area 13: Catfish Eddy Terraces* ..... 745 acres

Area 14: Robinson/Millston Pines*..... 626 acres

Area 15: Settlement Road Pine Swamp..... 156 acres

Area 16: Stanton Pines..... 971 acres

Area 17: Starlight Wetlands*..... 1,650 acres

Recreation Management
In recreation management areas, activities are focused on providing and maintaining land and water areas and facilities for outdoor public recreation or education.

Recreation Management Areas..... 2,396 acres

Area 18: Overmeyer Hills* ..... 2,241 acres

Area 19: Campgrounds and Day Use ..... 155 acres

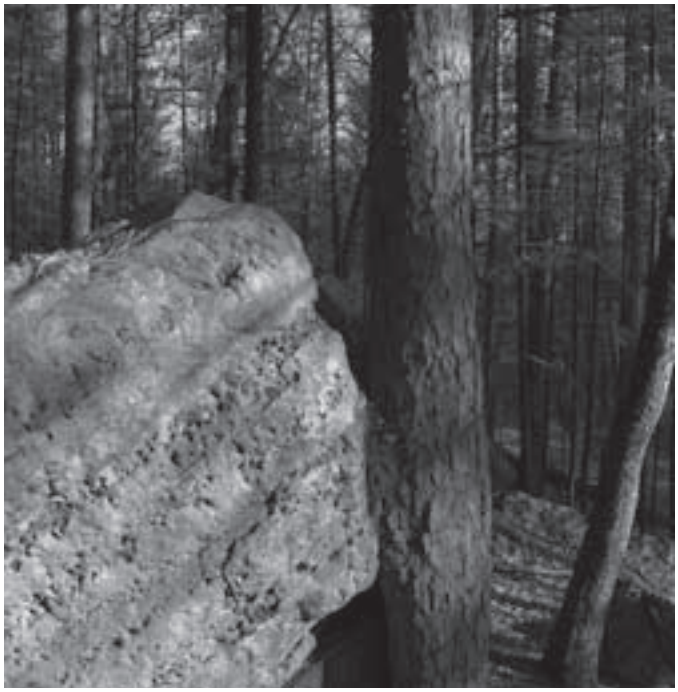
* Includes a designated State Natural Area

State Natural Area Designations
Six new State Natural Areas have been identified on the Black River State Forest. Four existing State Natural Areas have been expanded. There are a total of 10 State Natural Areas on the BRSF, totaling 4,892 acres in size.

State Natural Areas are part of a statewide system of sites identified for the purposes of ecological research, education, and to assure the full range of ecological diversity for future generations. State Natural Areas are unique because they can serve as stand alone properties or they can be designated on other properties such as state forests. On the state forest, State Natural Areas are not separate management areas, and the SNA designation does not change the underlying management objectives, prescriptions, or authorized management activities outlined in this master plan for each land management area.

Recreation
The plan maintains most of the existing recreational amenities and opportunities. Changes are designed to meet the demands of today's forest visitor and to improve the quality of the state forest's offerings. Increasing the number of electrical sites at modern campgrounds and enhancing the motorized trail system to address environmental concerns and increased use represent the most significant actions addressed in the plan.

Changes at camping facilities focus on improving amenities at the modern campground, such as increasing the number of electric campsites, installing a new shower and restroom facility, and constructing a new office building, to address changing preferences and demands for services by today's



recreational user. The state forest will continue to offer a variety of designated trails for hiking, biking, cross-country skiing, and horseback riding. The property will continue to provide hunting and fishing opportunities.

There will be changes made to the motorized trail system, including trail upgrades, re-routes, new trail connectors, and closures. Changes focus on improving trail tread, improving wetland crossings, reducing erosion and rutting, and protecting water quality, while improving rider experience and safety. The trail width in some locations will be narrowed where it has expanded from its original size due to heavy use in recent years. Restoration of vegetation in these areas will create a more natural appearance along the trail. Changes also focus on reducing user conflicts while maintaining or improving connectivity to the regional trail network.

A new trail connector to the Jackson County ATV trail system will be pursued in the Millston area. To fully implement this new connection, a variety of landowners will need to authorize ATV use on their respective ownerships. At the time when the new trail connection is authorized and opened for ATV use, 7.9 miles of the existing Wildcat Trail will be closed to ATV use (2.5 miles will be retained as a designated snowmobile trail). In the interim, the Wildcat Trail will remain open to maintain a short loop experience in the area.

Boundary Expansion

The master plan calls for an expansion to the project boundary for the Black River State Forest. Seven areas were selected because of their ability to sustain additional ecological, economic, and social value for the property and region. The expansion areas surround the existing boundary and total approximately 19,800 acres. If the boundary expansion were acquired in its entirety, the property would encompass approximately 88,000 acres, excluding water.

The Environmental Analysis

The Environmental Analysis (EA) analyzes the potential impacts of actions recommended in the master plan, ranging from land acquisition and facility development to forest management and operation. The EA for this plan concludes that the imple-

mentation of the master plan provides positive recreational, ecological, social, and economic benefits to the region with minimal adverse impacts.

The Public Involvement Process

Public involvement has been crucial to the development of this plan. A variety of tools were used to give information on the planning process and solicit public input, including news releases, mailings, surveys, annual reports, and a website. In addition, public open house meetings were held at various stages throughout the planning process. Public comment showed support for the recreational opportunities provided by the forest including camping, various trail opportunities, and hunting. Generally public comments supported state purchase of lands around the Black River State Forest, a move that would keep more of the area in the public domain open to a variety of recreation uses and protected from increasing development pressure. Motorized recreation issues received the most comments.

HOW THE STATUTORY AND OTHER PURPOSES AND BENEFITS OF THE STATE FOREST WILL BE REALIZED THROUGH THE PLAN

Purpose of State Forests

State forests are defined by Wisconsin Statutes 28. The purposes and benefits of state forests are outlined in the following language of 28.04 (2):

(a) The Department shall manage the state forests to benefit the present and future generations of residents of this state, recognizing that the state forests contribute to local and statewide economies and to a healthy natural environment. The Department shall assure the practice of sustainable forestry and use it to assure that state forests can provide a full range of benefits for present and future generations. The Department shall also assure that the management of state forests is consistent with the ecological capability of the state forest land and with the long-term maintenance of sustainable forest communities and ecosystems. These benefits include soil protection, public hunting, protection of water quality, production of recurring forest products, outdoor recreation, native biological diversity, aquatic and terrestrial wildlife, and aesthetics. The range of benefits provided by the Department in each state forest shall reflect its unique character and position in the regional landscape.

(b) In managing the state forests, the Department shall recognize that not all benefits under par. (a) can or should be provided in every area of a state forest.

(c) In managing the state forests, the Department shall recognize that management may consist of both active and passive techniques.

Local and Statewide Economies

Under the plan, the forest would increase its contribution to the state and local economies through forest products and tourism. Annual harvest levels will increase slightly in the next years based on current inventory data. Providing a wide range of diverse recreational opportunities and settings, maintaining scenic forest resources, and providing wildlife and fisheries habitat will ensure the forestís role as a destination in the region.

A Healthy Natural Environment and the Long-Term Maintenance of Sustainable Forest Communities and Ecosystems

Due to the size of the Black River State Forest and its varied resources, all of the prescribed benefits of a state forest may be realized on the property. By managing for these benefits, the goals of achieving a healthy natural environment and the long-term maintenance of sustainable forest communities and ecosystems would be realized.

Full Range of Benefits

Protection of Soil and Water Quality

Soil and water quality will continue to be protected. Erosion control practices, such as Best Management Practices (BMPs) for water quality, will be followed when conducting forest management and other management activities. Expansion of the forest boundary could provide opportunities to expand protection to new areas and waters.

Production of Recurring Forest Products

Under the plan, 92% of the property's forested acres (52,500 acres) will be under active sustainable forest management to produce forest products.

Outdoor Recreation

The plan maintains most existing recreational opportunities. The number of campsites with electricity will be increased at the modern campground. Rustic camping in other areas of the property may be reduced due to decreasing user demand for this type of camping.

A variety of recreation trail opportunities will continue to be offered on the Black River State Forest for hiking, biking, cross-country skiing, snowmobiling, and ATV riding.

Access to the Black River and flowages, and water-based recreational opportunities will be maintained and in some cases, enhanced.

Hunting and fishing opportunities will remain abundant.

Native Biological Diversity

Native biological diversity will be maintained through enhanced forest structure and species composition in some areas. Wetlands and other unique habitats will be protected. Endangered and threatened species will continue to be protected.

Aquatic Habitats and Wildlife

The Black River and flowages, wetlands, and riparian habitats will receive a high level of protection. All wetlands and riparian areas will be managed to promote healthy ecosystems and aesthetic enjoyment. BMPs for water quality will be followed and shorelines will remain undeveloped.

Terrestrial Wildlife

The forest and wildlife management prescriptions have been developed to ensure that habitat and ecosystems for a wide range of terrestrial and aquatic wildlife will be sustained and improved.

Aesthetics

Over time, scenic qualities of the forest will be enhanced as longer-lived species such as white pine become more common through forest management. The scenic quality of all shorelines and primary roadways will be maintained or enhanced through the application of aesthetic management techniques.

This is your plan. The Black River State Forest Master Plan addresses the desires of Wisconsin's citizens who want their forest resources sustained for future generations. At the same time, they expect a full range of environmental, social, and ecological benefits today and in the future. This plan attempts to achieve that balance in a scientifically credible and sustainable way. It was developed with countless hours of public input and several rigorous scientific and technical reviews. Many hands were involved in shaping it.

This is a visionary plan. The Black River State Forest Master Plan captures an idealized view of the state forestís long-term future. This points general direction for short-term actions. The diversity of the forest structure is enhanced over time, providing for a broad range of social and ecological values important to Wisconsin citizens, including recreation. Diverse forest communities contribute to the range of wildlife habitats necessary for all native species, and contribute to broad biodiversity.

This is a focused plan. The plan calls for active and passive management across the landscape and over time to achieve its goals and objectives. It relies on integrated and adaptive management of the forest resources and focuses on the compatibility of forest uses over time.

This is a flexible and adaptive plan. The plan calls for adaptive management and monitoring the response of the forest to strategies outlined in the plan. The responses are evaluated against the objectives. The plan calls for continuous monitoring and regular public reviews and a major review approximately every 15 years.

This is a sustainable plan. A sustainable forest requires flexibility and adaptability. This plan will assure sustainable forest products, continued recreation opportunities as well as a sustainable ecosystem and healthy watersheds.

MANAGEMENT AND DEVELOPMENT

MANAGEMENT AND DEVELOPMENT

This chapter details the management, acquisition, development, and use for the property.

VISION STATEMENT

The Black River State Forest is a healthy, dynamic forest that contributes to the diversity of natural communities within the region and is managed to provide a range of cultural, social, economic, and ecological attributes to benefit present and future generations. Compatible recreational opportunities are provided consistent with scenic beauty, natural settings, and sustainable practices. The state forest serves the needs of the people who live, work and recreate in and around it.

PROPERTY GOALS

1. Manage the forest using principles of ecosystem management which are consistent with the capabilities of the land and waters.

2. Provide a variety of renewable forest products and wildlife habitats consistent with the forest's capabilities, sustainable forestry guidelines, and aesthetic values.

3. Protect diverse terrestrial and aquatic communities including a range of forest types, age classes, and communities unique to the forest and to the state.

4. Identify and protect endangered and threatened resources, historic properties, and areas of geological, archaeological, or cultural significance.

5. Protect and enhance wild resource values such as solitude, remoteness, and the sights and sounds of a natural environment.

6. Provide a range of quality outdoor recreational activities and settings, both motorized and non-motorized, ranging from primitive to developed, consistent with resource capabilities.

7. Minimize or prevent conflict between different recreational, forest or other management uses and activities.

8. Provide opportunities for hunting, trapping, fishing, and wildlife viewing.

9. Provide a range of educational opportunities for state forest visitors.

10. Contribute to local and regional economies through sustainable management of timber, wildlife, and recreational resources.

11. Protect additional land and water resources, where opportunities exist, to enhance public benefits or improve management efficiencies.

GENERAL MANAGEMENT STRATEGY FOR THE STATE FOREST

The forested portions of the Black River State Forest are part of a complex ecosystem with a mix of biotic communities that provide habitat for a diversity of plants and animals. The forest consists of a mix of jack pine, oak, and aspen with an increasing component of white pine in the understory and canopy. Forested areas will be managed using sustainable forestry practices and a combination of both active and passive management to provide ecological, economic, and social benefits. Recreation management is also an important component on the Black River State Forest and will be implemented in a way that provides safe and sustainable recreational access while protecting the ecology and unique features of the forest. Scattered wetlands, streams, and flowages on the property will be managed to protect water quality and provide habitat for a variety of fish, birds, insects, and plants, including many rare species. Endangered and threatened species and their habitats will be protected through integrated and adaptive management techniques.

Figure 2.1 shows the general cover types on the Black River State Forest (Map 2.1, Appendix). For inventory purposes, forest stands are classified by their dominant cover type. This means that forest stands listed as aspen have 50% or more of their basal area in aspen trees. Most forest stands contain a mix of tree species. For example, an "aspen"area probably includes a mixture of red and white pine, red maple, and scrub oak. Therefore, two forest stands with the same dominant cover type may not have the same overall forest composition.

LAND MANAGEMENT AREAS

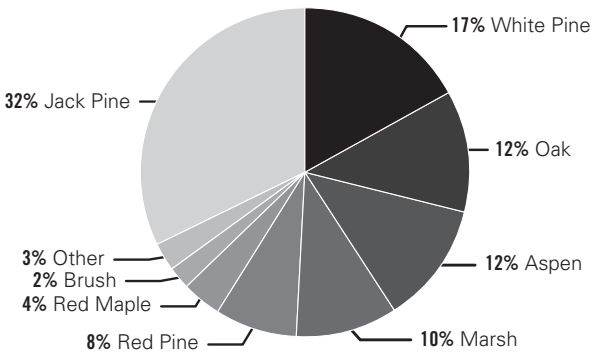
The Black River State Forest has been divided into 19 Land Management Areas: three Forest Production Management Areas, two Habitat Management Areas, 12 Native Community Management Areas, and two Recreation Management Areas (Table 2.1). Within the designated Land Management Areas, there are 10 State Natural Areas; nine located within Native Community Management Areas and one within a designated Recreation Area.

Each management area describes a unique landscape or management focus that considers soils, topography, community type, and other factors which shape the recommended management for each area. All of the management areas are shown on Map 2.2 in the Appendix.

The General Forest Management Prescriptions provided later in this chapter outline the standard management practices to be used for each forest type (e.g. aspen, white/red pine, oak, etc.). However, as management objectives vary from area to area, individual area management prescriptions may be modified from the standard prescriptions.

Each management area has specific short- and long-term objectives that articulate the future desired condition based on the ecological capabilities of the area and other factors. Because forests and landscapes change slowly, actions taken, or not taken, over the next 15 years may require 50-100 years to affect the forest as a whole.

FIGURE 2.1 LAND COVER TYPES OF THE BLACK RIVER STATE FOREST



Under the plan, there are approximately 52,500 acres available for active forest management. This equates to 92% of the property's forested acreage, or 77% of the entire property. Eight percent, or 5,240 acres, of the entire property is designated to be passively managed allowing natural processes to predominate. Some of the passively managed areas are forested, but many have not been actively managed in the past due to their lack of merchantable timber, or their steep, wet, or otherwise inaccessible nature. The designation of some forested acres as passive management equates to approximately 6-8% of the forested acres on the property being removed from management. Non-forested areas, such as open water and wetlands, account for the balance of acreage unavailable for forest management.

Total Property Acres	68,237
Forested Acres	56,800
Forested Acres Available for Management	52,500
Passive Management Acres*	5,240

** Forested acres designated as passive management areas, equate to 6-8% of the property's forested acres being removed from active forest management opportunities.*

Short descriptions of the different types of management areas are below.

Forest Production
Management activities are focused primarily on the sustainable production of timber and other forest products; however in areas of high recreation use and where site conditions allow, management can promote the production of timber on extended rotations in a manner that promotes long-term visual appeal. In addition, while managing for timber products, management activities will also promote the development and maintenance of certain ecological attributes.

Habitat Management
Management activities are designed to provide or enhance habitat, whether upland, wetland or aquatic, to support specific species of plants or animals while still allowing for forest management.

Native Community Management
Management activities are intended to represent, restore and perpetuate native plant and animal communities, whether upland, wetland or aquatic, and other aspects of native biological diversity while still allowing for forest management.

Recreation Management
Management activities are focused on providing and maintaining land and water areas and facilities for outdoor public recreation or education while still allowing for forest management.

Each Land Management Area contains the following information:

- Overview and summary
- Description of the forest resource
- Map of the area
- Current and projected land cover based on available reconnaissance data
- Short and long term objectives
- Management prescriptions

TABLE 2.1 LAND MANAGEMENT AREAS

Area #	Land Management Areas (% of forest)	Acres
	Forest Production Management Areas (68%)	**46,586**
1	Perry Creek Basin	3,038
2	Morrison and Levis Creek Basin	29,350
3	Robinson Creek Basin	14,198
	Habitat Management Areas (14%)	**9,276**
4	Jack Pine	4,277
5	Dike 17 Wildlife	4,999
	Native Community Management Areas (15%)	**9,979**
6*	Upper Black River	1,909
7*	Arbutus Oaks	215
8*	Castle Mound Pine Forest	171
9*	East Fork of the Black River	1,083
10*	Ketchum Creek Headwaters	581
11	Paradise Valley Pines	669
12*	Peatlands	1,203
13*	Catfish Eddy Terraces	745
14*	Robinson/Millston Pines	626
15	Settlement Road Pine Swamp	156
16	Stanton Pines	971
17*	Starlight Wetlands	1,650
	Recreation Management Areas (3%)	**2,396**
18*	Overmeyer Hills	2,241
19	Campgrounds and Day Use	155
	Total	**68,237**

** Includes a designated State Natural Area*

FOREST PRODUCTION MANAGEMENT AREAS

The general management objective of a forest production area is the sustainable production of forest products. Forest production areas also meet a wide range of ecological and recreation objectives. The specific objectives for any given management area may vary depending on site capability, forest types, and societal needs. Desired associated benefits, desired future conditions, adjacent land uses, and local economic conditions all influence the objectives as well.

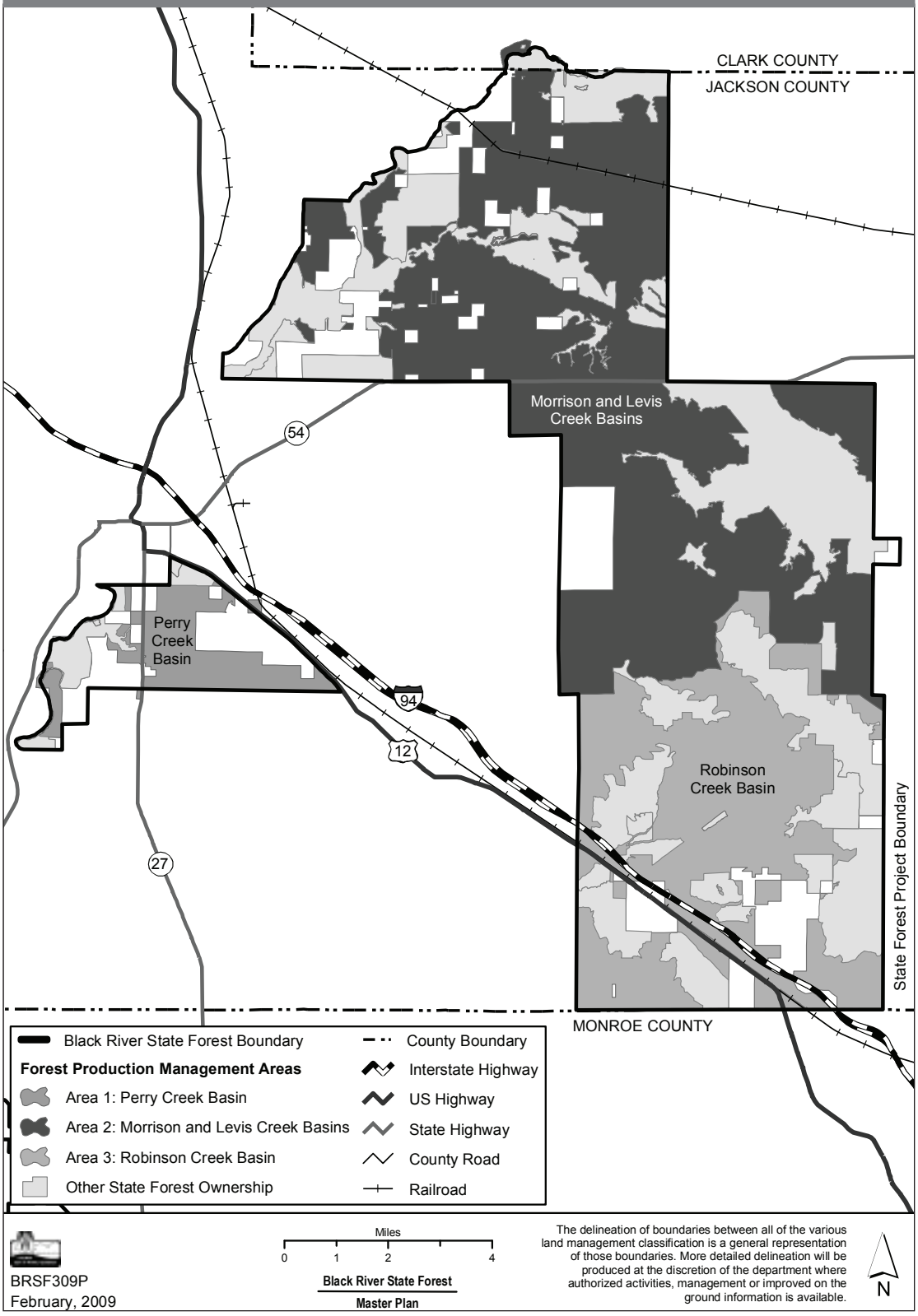
In areas of high recreation use or scenic value and where site conditions allow, management can promote the production of timber on extended rotations in a manner that promotes long-term visual appeal. In addition, while managing for timber products, management activities will also promote the development and maintenance of certain ecological attributes to protect unique habitats.

Please refer to the General Forest Management Prescriptions on page 98 for prescriptions by forest type. These prescriptions apply and all management activities are authorized, except as noted below for these management areas.

TABLE 2.2 FOREST PRODUCTION MANAGEMENT AREAS

Area #	Forest Production Management Areas	Acres
1	Perry Creek Basin	3,038
2	Morrison and Levis Creek Basin	29,350
3	Robinson Creek Basin	14,198
	Total	**46,586**

MAP 2.3 FOREST PRODUCTION MANAGEMENT AREAS



AREA 1: PERRY CREEK BASIN

This 3,038 acre area is located south of Black River Falls and Brockway and includes land west of I-94 and east of the Black River. State Highways 12 and 27 and other township roads transect this parcel. The area is a relatively broad plain of flat to slightly rolling, dry and poorly drained (wet) alluvial sandy soils, as is characteristic of the state forest. The topography becomes steeper near the Black River where slopes may range from 15-45% between hilltop terraces and the floodplain.

A major complex of privately owned flowages and cranberry beds is located on the east side at the upper reaches of Perry Creek. In addition, private land, including year-round and seasonal residences, is adjacent to much of this area. Due to the relatively small size and nearness to the community of Black River Falls, there are no large blocks of remote land.

Description of the Forest Resource

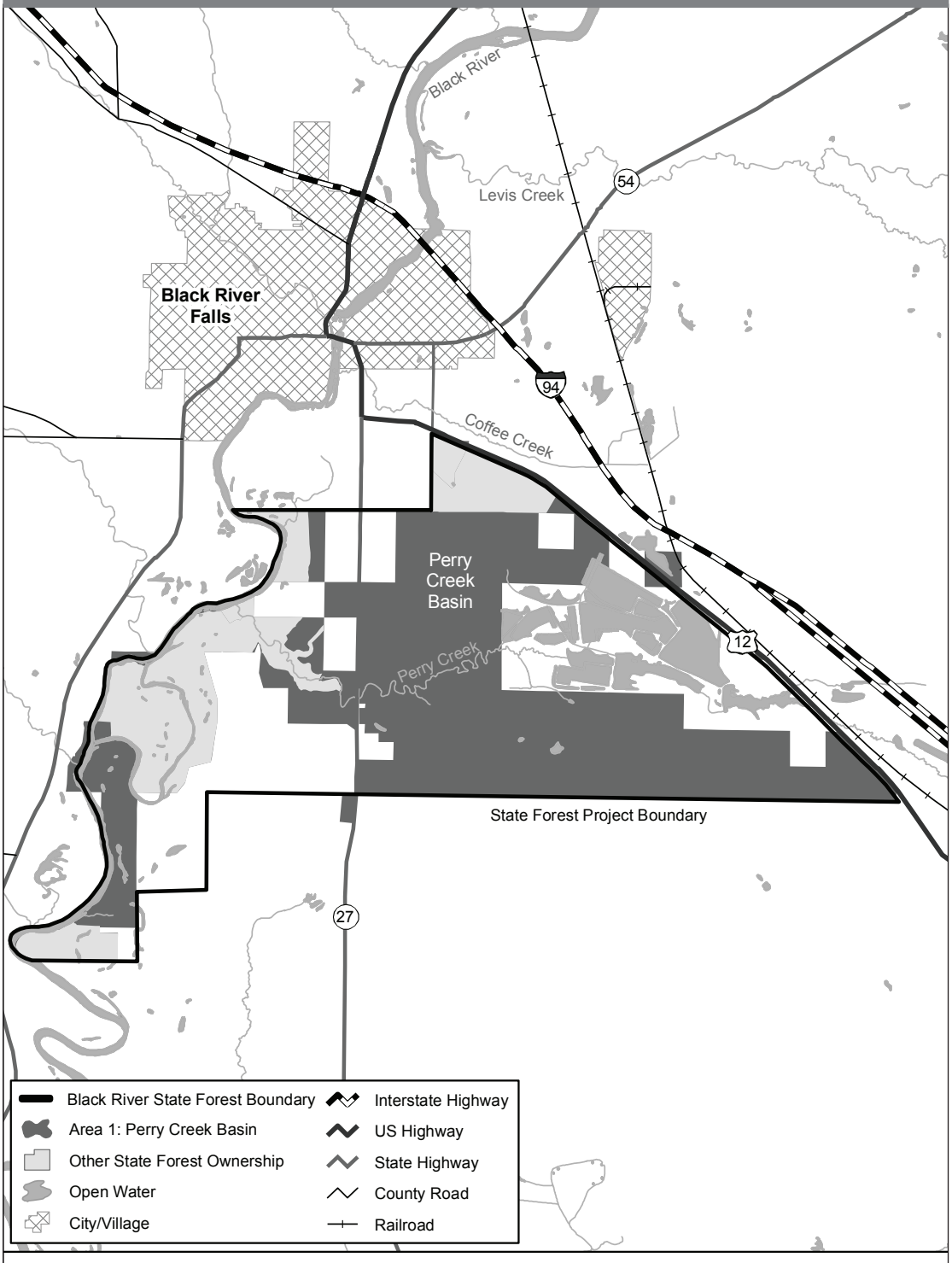
This area is comprised of both upland and lowland forest. Due to a wildfire which burned over 3,000 acres in 1977, this area of the forest includes 1,714 acres of even-aged aspen, oak, and re-planted red pine plantations. Two jack pine stands consumed in the fire were planted to red pine shortly after salvage was completed. Jack pine is a minor component within the fire-regenerated aspen and oak stands, although occasionally a small patch of dominant jack pine is found in the burn area.

AREA 1 SUMMARY

- Increase age diversity of trees in the forest.
- Maintain aspen as a significant component of the forest.
- Maintain the aesthetic appeal of the forest, particularly along key corridors.
- Buffer native communities along the Black River and Perry Creek corridor.
- Manage for long-lived species like oak, white pine, and red pine.

AREA 1 LOCATOR MAP

MAP 2.4 PERRY CREEK BASIN



Long-Term Management Objectives (100 years)
Perry Creek basin will provide a continuous supply of forest products. Aspen and oak will continue to be dominant cover types, with a potential increase in acreage and a wider diversity of age classes. Red pine plantations will be converted to native cover types with a preference for oak. Bottomland hardwood stands will continue to thrive and contribute to the aesthetic and ecological integrity of adjacent native community management areas. White pine acreage will increase slightly with more large, older trees present. The Perry Creek Basin will continue to be an attractive setting for people to recreate, especially along the Black River and Perry Creek corridors. Ample hunting and wildlife viewing opportunities will be available.

Short-Term Objectives (50 years)

- Maintain the diversity of cover types, improve the diversity of age classes for aspen and oak, and maintain jack pine if/when opportunities exist.
- Maintain aesthetic appeal (such as large trees), forest health, native community habitat (small pockets of barrens, white pine-red maple swamp), and wildlife habitat.
- Maintain aspen as a significant component in mixed or pure stands, and spread harvests over a slightly larger range of rotation as described in the DNR Silviculture and Forest Aesthetics Handbook to diversify age classes.
- Favor long-lived species where appropriate along interstate and state highways and the Black River corridor.
- Manage bottomland hardwoods and pine stands in floodplain and lower terraces to compliment the native community qualities, such as large trees, found on Hawk Island and upstream at the confluence of Perry Creek with the Black River.
- Plant open fields acquired through land acquisition with tree species suitable to the site.

Area Specific Resource Management Prescriptions
The entire area is managed using "active management" techniques and will be implemented following guidelines in the DNR Silviculture and Forest Aesthetics Handbook. The General Forest Management Prescriptions for each appropriate forest type apply to this management area.

FIGURE 2.2 PERRY CREEK BASIN CURRENT LAND COVER

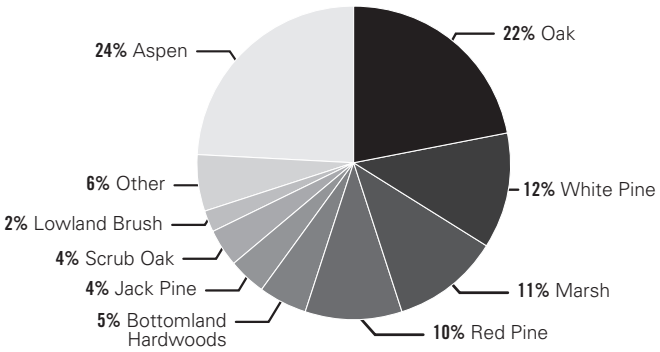


TABLE 2.3 PERRY CREEK BASIN CURRENT AND PREDICTED LAND COVER

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
Forested Types				
Aspen	736	24%	736	24%
Oak	678	22%	678	22%
White Pine	348	12%	378	13%
Red Pine	300	10%	300	10%
Bottomland Hardwoods	151	5%	151	5%
Jack Pine	131	4%	131	4%
Scrub Oak	121	4%	91	3%
Non-forested Types				
Marsh	317	11%	317	11%
Other	191	6%	191	6%
Lowland Brush	65	2%	65	2%
Total	**3,038**	**100%**	**3,038**	**100%**

AREA 2: MORRISON AND LEVIS CREEK BASIN

This area, comprised of 29,350 acres, stretches from the Clark County line south to the north slopes of Overmeyer Hills to a few un-named isolated hills on the west property boundary. This productive forest land lies in Adams, Komensky, and Millston townships.

This area is part of the central sand plain of eastern Jackson County that has mostly level topography with some dry but predominantly hydric soils (swampy). Morrison and Levis Creeks are two main streams originating out of sphagnum marshes that cross the state forest from east to west and join the Black River.

State Highway 54, County Highway K, and North Settlement Road are located in this management area and require aesthetic and scenic management considerations in all forestry operations.

Two Native American (Ho-Chunk) communities are located north of Highway 54 on the west boundary and are within the boundary of the state forest. The area between Highway 54 and the Clark County line has some small private land holdings with and without homes and cabins. South of Highway 54 there are no private land holdings within the existing state forest boundary, making it one of the more remote locations on the property.

Description of the Forest Resource

This area is comprised of both dry upland and moist to wet lowland forest. The predominant forest cover type is jack pine (mostly of natural origin) growing on dry and moist sandy soils. Natural white pine stands, mixed with some oak, are found along stream banks and wet forest sites; the oldest stands date back to the 1900s, near the end of the logging era.

The jack pine forest in this area became established in the 1930s following re-settlement and wildfire protection and suppression. Planting of pine began in 1937 by federal agencies and continued through 1954 when the land was acquired by the State of Wisconsin. Most of the plantations reforested agricultural fields and pastures of failed farms. Red pine was the only species planted by the state forest from the 1950s until the jack pine budworm outbreak in 1991-94.

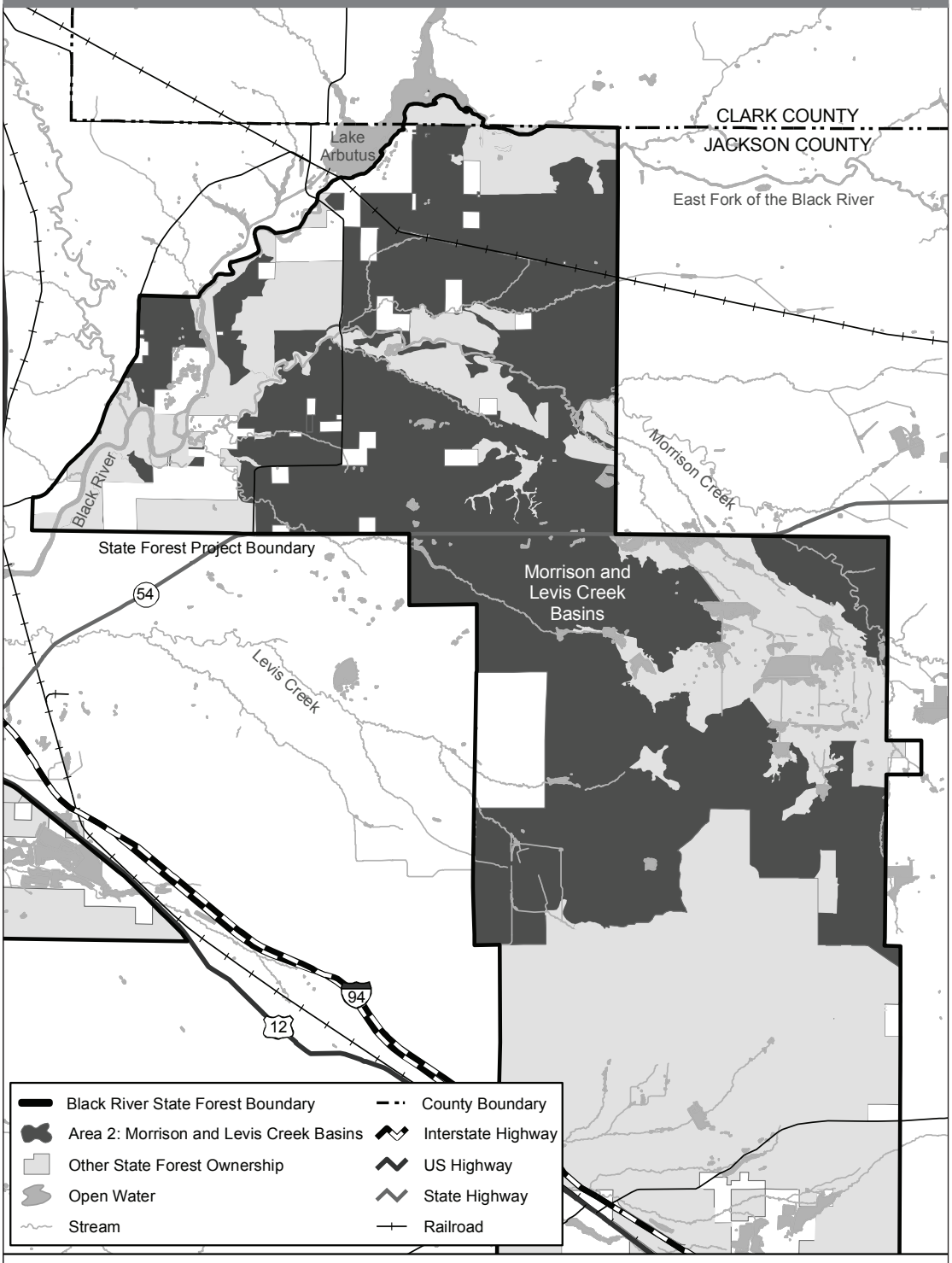
AREA 2 SUMMARY

- Increase age diversity of trees in the forest.
- Manage and maintain long-lived species like oak, white pine, and red pine.
- Evaluate and consider conversion of plantations to native cover types where appropriate.
- Connect wetlands with a short-term open landscape through harvesting of early successional species.
- Maintain and enhance aesthetic and scenic qualities along key transportation corridors and near the Ho-Chunk community.

AREA 2 LOCATOR MAP

Jack pine harvesting accelerated from 1993-1997 in an effort to salvage budworm infested trees and cut mature stands. Adequate natural regeneration of jack pine occurred on a third of the cutover acreage. Another third of the area regenerated to a mix of scrub oak and aspen with minor components of jack pine and white pine. The balance of the harvested area was planted primarily to jack pine with some red pine and white pine also planted. Survival of these 1990s plantations varied from good to poor with the majority falling in the latter category. Natural regeneration eventually filled the void on these sites, but some small open areas remain. The age distribution of jack pine in this management area is very even and may be approaching a regulated forest condition.

MAP 2.5 MORRISON AND LEVIS CREEK BASIN



Long-Term Management Objectives (100 years)
Morrison and Levis Creek Basin will provide a continuous supply of forest products. Jack pine will continue to be the most common cover type. Jack pine acreage will remain the same, but a wider diversity of age classes will be present. White pine acreage and age class diversity will increase. A greater number of large, old white pine trees will be present. Oak and aspen acreage will remain similar to current levels, but oak acreage may increase as red pine plantations are converted to native cover types. Red maple will become a more common component of oak and white pine stands. Ample hunting and wildlife viewing opportunities will be available.

Short-Term Objectives (50 years)

- Develop and maintain a diversity of ages and stand sizes for aspen and aspen-hardwood mix using General Forest Management Prescriptions.
- Maintain age class distribution of jack pine through harvesting at economic rotations using General Forest Management Prescriptions, realizing that natural conversion to white pine and/or red maple on wet sites will be the tendency.
- Manage, enhance, and maintain red pine plantations throughout the normal economic and/or biological rotation. Consider conversion to native cover types where appropriate.
- Plant open fields acquired through land acquisition with tree species suitable to the site.
- Manage and maintain oak and oak/pine mix through harvesting at economic and/or biological rotations and tend towards a more even age class distribution.
- Harvest early successional species, using General Forest Management Prescriptions, to connect wetlands west and slightly south of the Dike 17 Wildlife Area with short-term open landscapes.
- Maintain and enhance a variety of aesthetic and scenic qualities along State Highway 54, County Trunk K, North Settlement Road, and the Native American (Ho-Chunk) community.

Area Specific Resource Management Prescriptions
The entire area is managed using "active management" techniques and will be implemented following guidelines in the DNR Silviculture and Forest Aesthetics Handbook. The General Forest Management Prescriptions for each appropriate forest type apply to this management area.

FIGURE 2.3 MORRISON AND LEVIS CREEK BASIN CURRENT LAND COVER

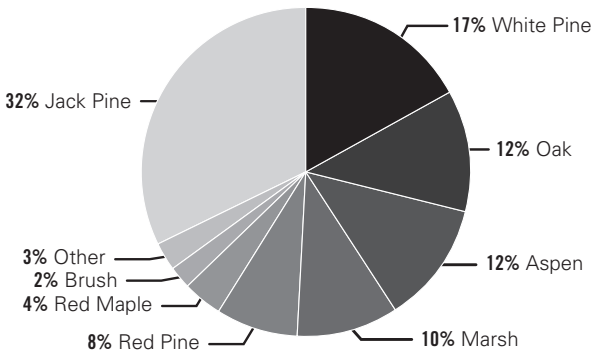


TABLE 2.4 MORRISON AND LEVIS CREEK BASIN CURRENT AND PREDICTED LAND COVER

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
Forested Types				
Jack Pine	9,256	32%	9,153	31%
White Pine	5,123	17%	5,441	19%
Aspen	3,470	12%	3,588	12%
Oak	3,433	12%	3,092	11%
Red Pine	2,309	8%	2,109	7%
Red Maple	1,319	4%	1,495	5%
Non-forested Types				
Marsh	3,027	10%	2,990	10%
Other	925	3%	884	3%
Brush	488	2%	598	2%
Total	**29,350**	**100%**	**29,350**	**100%**

MORRISON AND LEVIS CREEK BASIN

AREA 3: ROBINSON CREEK BASIN

This area of 14,198 acres stretches from the Monroe County line north to the northern slopes of Overmeyer Hills to a few isolated small hills along the western property boundary.

This area is part of the central sand plain of eastern Jackson County, which has level topography within the basin and is surrounded by Overmeyer Hills, Rudd Hills, and the Millston Ridge. This forest production area has the greatest relief on the state forest. Robinson Creek headwaters lies just east of the forest boundary and flows west through a private cranberry operation and is joined by Ketchum Creek and Glenn Creek before leaving the state forest on its way to the Black River.

State Highway 12 and I-94 transect the lower southwest third of the forest at a northwest to southeast angle. County Highway O runs east/west through the state forest while North Settlement Road, a town road designated as a Rustic Road, connects Highway O with Highway 54. The unincorporated village of Millston lies within the boundary of the state forest. All the routes mentioned above require aesthetic and scenic management considerations in all forestry operations.

Description of the Forest Resource

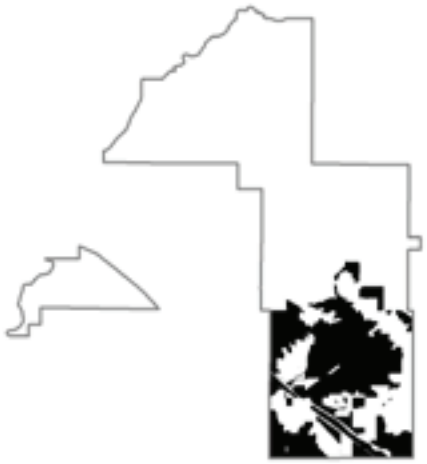
This area is comprised of both dry upland and moist to wet lowland forest. The predominant forest cover type is white pine, mostly of natural origin dating back to about the 1900s, growing on dry as well as moist sandy soils. Natural jack pine has gone through a complete harvest rotation. As with the Morrison and Levis Creek Basins Management Area, the jack pine forest became established in the 1930s following re-settlement and wildfire protection and suppression. Accelerated harvest of jack pine occurred between 1993 and 1997 to salvage budworm infested trees, with subsequent natural regeneration and supplemental planting bringing the forest to its current state. The age distribution of jack pine is very even and may be approaching a regulated forest condition. The age distribution of white pine is varied ranging from 1 to 100 years.

The hilly terrain supports a decent oak forest that varies from pure red oak to mixed red, white, and black oak to a range of oak, pine, and red maple mixes on dry to dry-mesic sites. The oak age distribution ranges from 60 to 100 years.

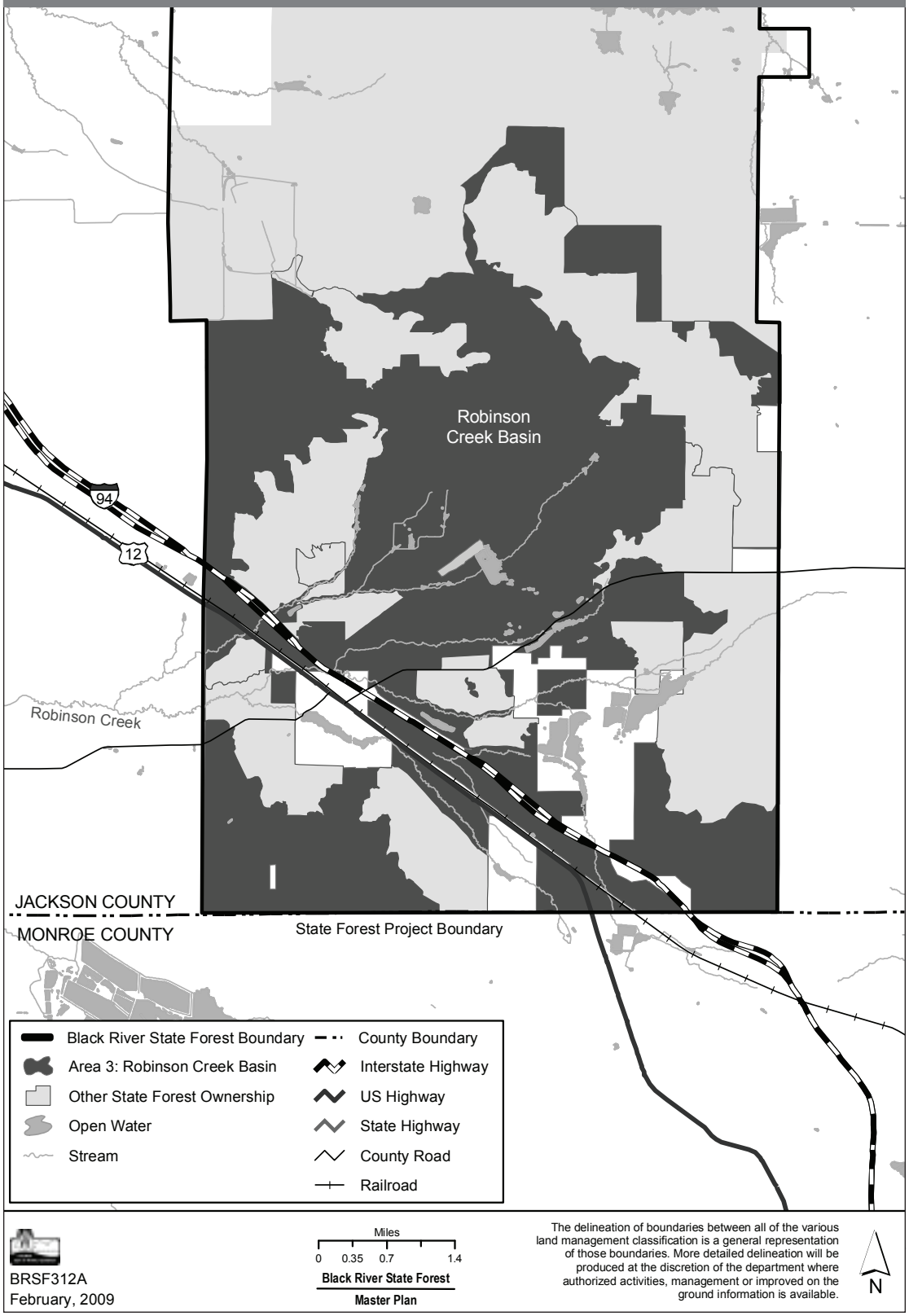
AREA 3 SUMMARY

- Develop and maintain age diversity of trees in the forest.
- Evaluate and consider conversion of plantations to native cover types where appropriate.
- Manage and maintain long-lived species like oak, white pine, and red pine.
- Maintain and enhance aesthetic and scenic qualities along key transportation corridors.

AREA 3 LOCATOR MAP



MAP 2.6 ROBINSON CREEK BASIN



Long-Term Management Objectives (100 years)
Robinson Creek Basin will provide a continuous supply of forest products. White pine will continue to be the most common cover type, with an increase in acreage, age class diversity, and in the presence of large, older trees. Oak acreage will increase slightly and will have a wider diversity of age classes. Both the oak and white pine cover types will benefit from the conversion of red pine plantations to native cover types. Red maple will become a more common component of oak and white pine stands. Aspen, jack pine, and tamarack stands will be present, but in small numbers. Ample hunting and wildlife viewing opportunities will be available.

Short-Term Objectives (50 years)

- Develop and maintain a diversity of ages and stand sizes for aspen and aspen-hardwood mix using General Forest Management Prescriptions.
- Maintain age class distribution of jack pine through harvesting at economic rotations using General Forest Management Prescriptions realizing that natural conversion to white pine and/or red maple on wet sites will be the tendency.
- Manage, enhance, and maintain red pine plantations throughout the normal economic and/or biological rotation. Consider conversion to native cover types where appropriate.
- Plant open fields acquired through acquisition with tree species suited for the site.
- Manage and maintain oak and oak/pine mix through harvesting at economic and/or biological rotations and tend towards a more even age class distribution.
- Manage red oak on dry mesic sites on an economic and/or biological rotation for maximum quality and quantity of timber. Regenerate stands with the highest red oak component possible given that red maple or white pine may out compete oak.

Area Specific Resource Management Prescriptions
The entire area is managed using "active management" techniques and will be implemented following guidelines in the DNR Silviculture and Forest Aesthetics Handbook. The General Forest Management Prescriptions for each appropriate forest type apply to this management area.

FIGURE 2.4 ROBINSON CREEK BASIN CURRENT LAND COVER

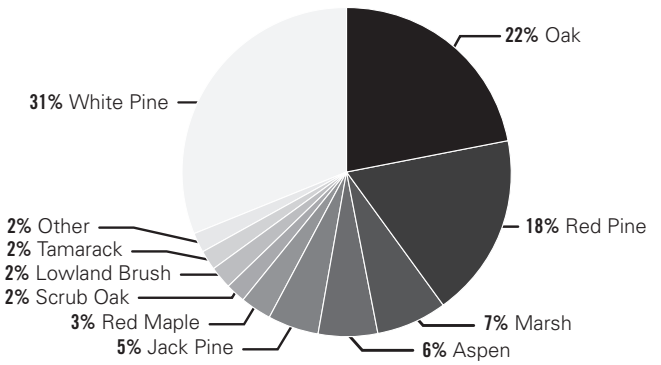
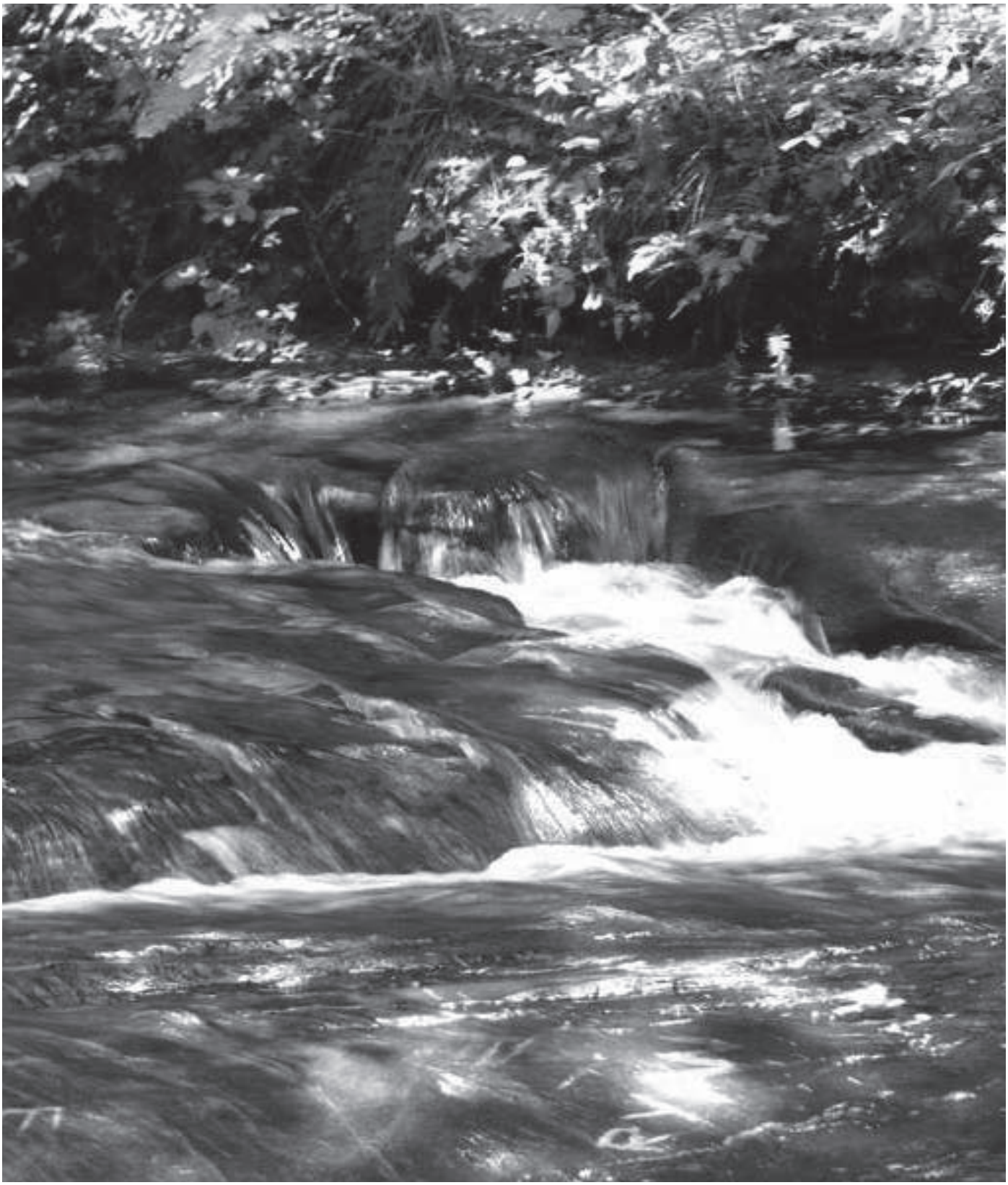


TABLE 2.5 ROBINSON CREEK BASIN CURRENT AND PREDICTED LAND COVER

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
Forested Types				
White Pine	4,431	31%	4,527	32%
Oak	3,109	22%	2,829	20%
Red Pine	2,562	18%	2,546	18%
Aspen	785	6%	849	6%
Jack Pine	704	5%	750	5%
Red Maple	395	3%	566	4%
Scrub Oak	341	2%	282	2%
Tamarack	221	2%	283	2%
Non-forested Types				
Marsh	990	7%	1,001	7%
Lowland Brush	275	2%	282	2%
Other	385	2%	283	2%
Total	**14,198**	**100%**	**14,198**	**100%**

ROBINSON CREEK BASIN



HABITAT MANAGEMENT AREAS

The management objective of habitat management areas is to provide or enhance habitat (upland, wetland, or aquatic) to support specific species of plants or animals. Habitats and communities with this designation are managed for a wide variety of purposes, including focused species production and protection.

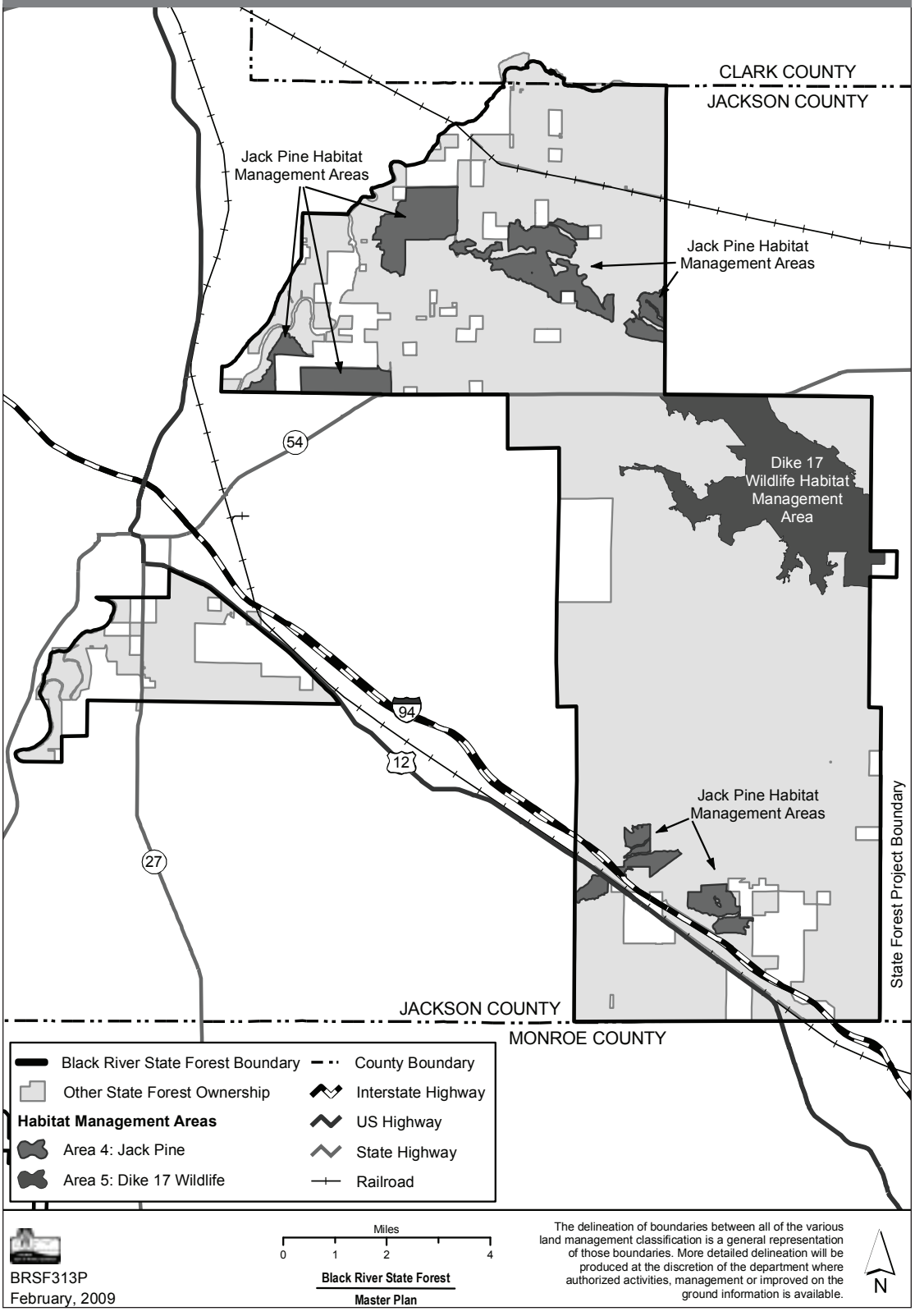
Examples of management activities within habitat management areas are dependent upon the habitat or species type included. Management could potentially include timber harvesting, herbicide application, mowing, burning, road construction, site preparation, planting, and/or erosion control.

TABLE 2.6 HABITAT MANAGEMENT AREAS

Area #	Habitat Management Areas	Acres
4	Jack Pine	4,277
5	Dike 17 Wildlife	4,999
	Total	**9,276**

Please refer to the General Forest Management Prescriptions on page 98 for prescriptions by forest type. These prescriptions apply and all management activities are authorized, except as noted below for these management areas.

MAP 2.7 HABITAT MANAGEMENT AREAS



BRSF313P
February, 2009

The delineation of boundaries between all of the various land management classification is a general representation of those boundaries. More detailed delineation will be produced at the discretion of the department where authorized activities, management or improved on the ground information is available.

AREA 4: JACK PINE AREA

This 4,277 acre habitat management area is primarily located within two regions of the property and is comprised of several non-connected parcels ranging in size from 100 to 2,000 acres. The largest Jack Pine Habitat Management Area is located in a narrow band approximately five miles long and immediately north of High Bank Road and Staffon Road. The second is located approximately one mile north of the Town of Millston. The area contains a significant jack pine resource and associated barrens native community. The area is known to contain one federally endangered animal species, two state threatened plant species, numerous Species of Special Concern, and numerous Species of Greatest Conservation Need.

Description of the Forest Resource
The most common timber types in this area are jack pine and red pine. Other timber types such as aspen, white pine, and red maple also occur, but are less common.

Much of the area was impacted by jack pine budworm in the early and mid 1990s and was subsequently salvaged. The majority of the impacted area was replanted primarily to jack pine and some red pine with mixed results. On the driest sites, recent droughts have thwarted regeneration attempts, leaving areas of various sizes void of trees. Drought has also affected older jack pine stands, resulting in decline. Some of these stands were harvested in 2006.

Long-Term Management Objectives (100 years)
Establish a relatively even distribution of age classes dominated by jack pine, with mixed areas of red pine and scrub oak. Maintain some areas primarily for their prairie/barrens associated plants and animals, while managing other areas for continuous mill products. Diversity in tree density and age class will provide continuous mill product and critical habitat for barrens associated plants and animals.

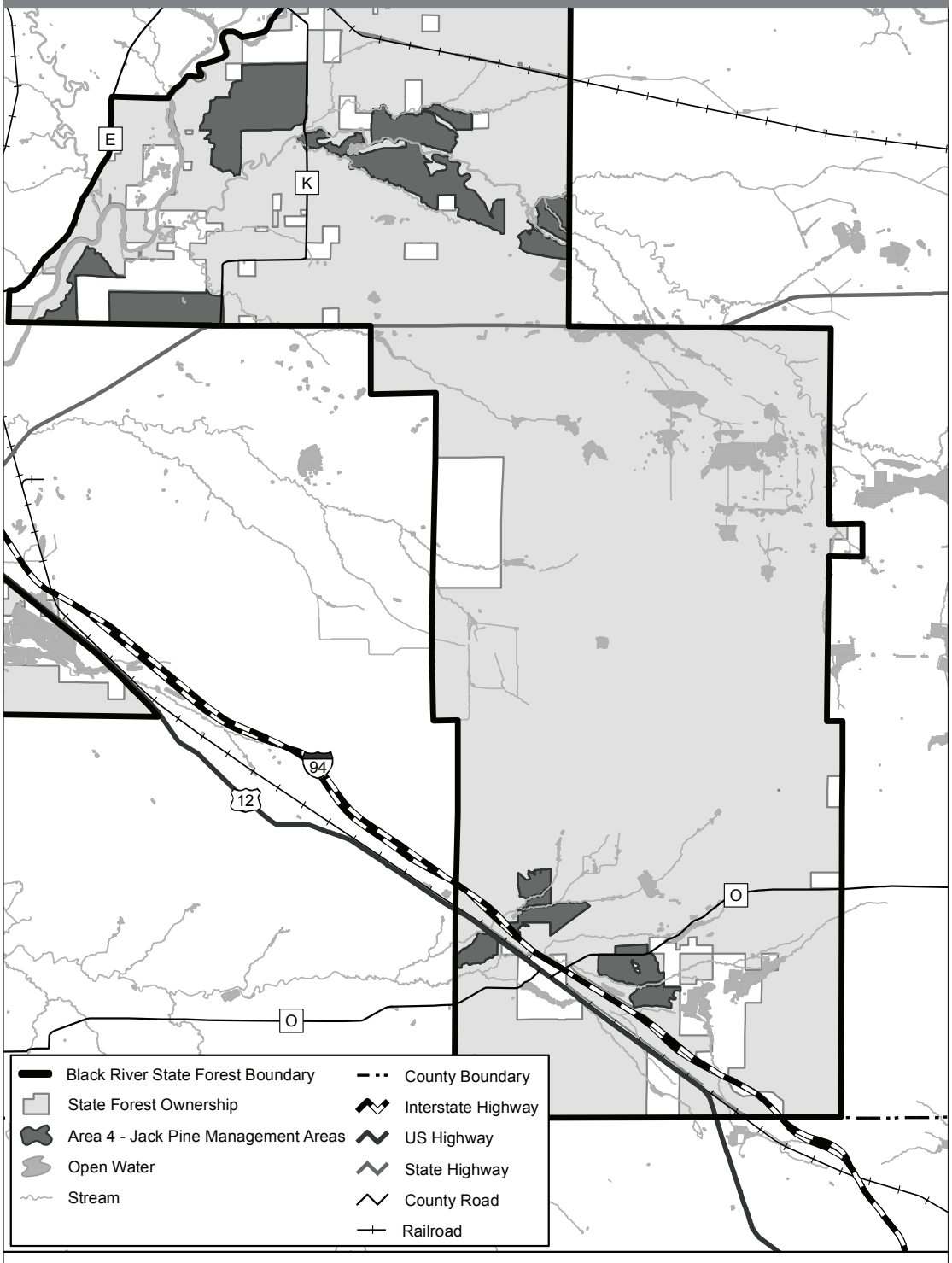
Short-Term Management Objectives (50 years)
- Convert red pine plantations to jack pine or a mix of jack pine, red pine, and scrub oak at rotation.
- Maintain jack pine component on all sites except those designated and maintained in a treeless, grassy condition.
- Protect, maintain, and increase barrens vegetation in designated areas with specific emphasis on rare plants.
- Protect, maintain, and increase barrens habitat associated animals, with specific emphasis on rare birds, invertebrates, and reptiles.
- Increase connection between patches of barrens vegetation.

AREA 4 SUMMARY

- Maintain and increase jack pine community type.
- Manage the state and globally imperiled pine barrens natural community sites for ecological values and rare species habitat needs.
- Use prescribed fire as a management tool in a habitat type historically shaped by fire.
- Maintain small wetlands and non-barrens habitat.

AREA 4 LOCATOR MAP

MAP 2.8 JACK PINE AREA



Area Specific Resource Management Prescriptions

- Actively manage red pine stands primarily through thinning. Prior to and/or at rotation, use herbicide and/or prescribed fire to reduce oak component where necessary for site preparation, and to stimulate and improve barrens vegetation near stand edges and within smaller stands.
- Actively manage jack pine stands primarily through clearcutting, using a shifting mosaic methodology which distributes harvests throughout the area to provide a wide age class distribution. Use a variety of regeneration techniques such as natural, direct seeding, planting, seed trees, and prescribed fire.
- Identify and designate high quality barrens vegetation sites to be maintained as permanent openings of variable size. Attempt to dovetail these sites with areas where dry soils make it difficult to grow/regenerate trees (lowest site index) and where rare species are concentrated. These sites may be incorporated into the Karner Blue Butterfly Management Plan. Periodically use prescribed fire, mechanical brushing, and selective use of herbicides using DNR guidelines to minimize impacts on sensitive species.
- Identify high quality barrens vegetation sites to be maintained in conjunction with timber production. These sites may be incorporated into the Karner Blue Butterfly Management Plan. Use existing DNR screening guidance to minimize impacts on sensitive species.
- Mechanical brushing, selective use of herbicide, and prescribed fire could be potentially useful management tools for improving understory species diversity as well as site preparation for regeneration at rotation. When planting, use variable densities and techniques to promote patchiness of variable sizes that will maintain some openings within some stands as they mature.
- Use timber harvesting, brushing, and selected herbicides along roadsides and between stands to develop vegetative corridors and to maintain or increase width of open areas. Consider augmenting species diversity with seed collected from nearby areas that would provide host plants and nectar sources for rare species maintenance and dispersal.

FIGURE 2.5 JACK PINE BASIN CURRENT LAND COVER

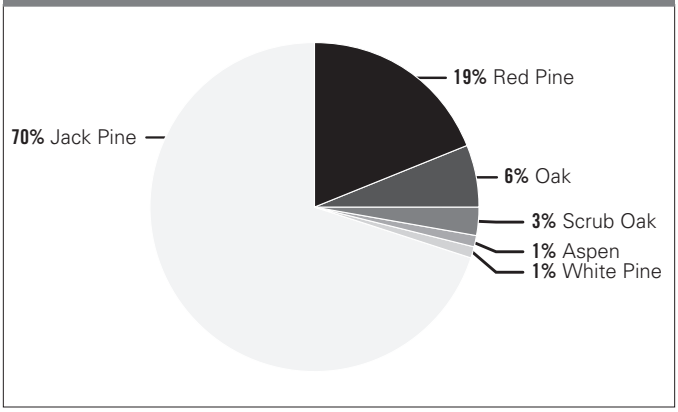


TABLE 2.7 JACK PINE AREA CURRENT AND PREDICTED LAND COVER

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
Forested Types				
Jack Pine	2,995	70%	2,822	66%
Red Pine	818	19%	799	19%
Oak	236	6%	216	5%
Scrub Oak	129	3%	129	3%
Aspen	49	1%	27	1%
White Pine	35	1%	76	2%
Red Maple	10	0%	10	0%
Non-forested Types				
Grassland	5	0%	198	4%
Total	**4,277**	**100%**	**4,277**	**100%**

AREA 5: DIKE 17 WILDLIFE HABITAT MANAGEMENT AREA

In 2008, the Dike 17 Wildlife Habitat Management Area was 3,700 acres in size, with 2,100 acres protected as a refuge. The refuge is closed annually to the public from September 1st to December 31st, except during gun deer season. This area is located south of Highway 54, west of North Settlement Road, east of Wildcat Road, and north of the old railroad grade. The area was originally created to provide waterfowl resting and loafing areas through creation and maintenance of 13 flowages, and to provide an open landscape within the state forest for Sharp-tailed Grouse habitat.

Description of the Forest Resource

This area is comprised of both sandy and peat soils. Vegetation is mostly (about 80%) a mix of marsh, lowland brush or keg, grassland, and open water, with scattered stands of oak, jack pine, and aspen making up the remainder.

Short- and Long-Term Management Objectives (50-100 years)

- Provide approximately 5,000 acres of high quality, ecologically functional grass, shrub, barrens and wetland habitats for waterfowl, Sharp-tailed Grouse, and a variety of endangered, threatened, special concern, and rare species, such as the Karner blue butterfly, Northern Harrier, Whooping Crane, American Bittern, Black Meadow Hawk, Blandings turtle, and frosted elfin.
- Provide a protected resting, loafing, and nesting area for waterfowl, including the federally endangered Whooping Crane, in balance with providing public use opportunities.
- Provide opportunities for hunting big game, waterfowl, small game, and upland game birds.
- Provide trapping opportunities.
- Provide opportunities for viewing birds and other wildlife, for nature study, and for hiking.
- Provide opportunities for non-motorized boating and paddling on flowages and ponds.

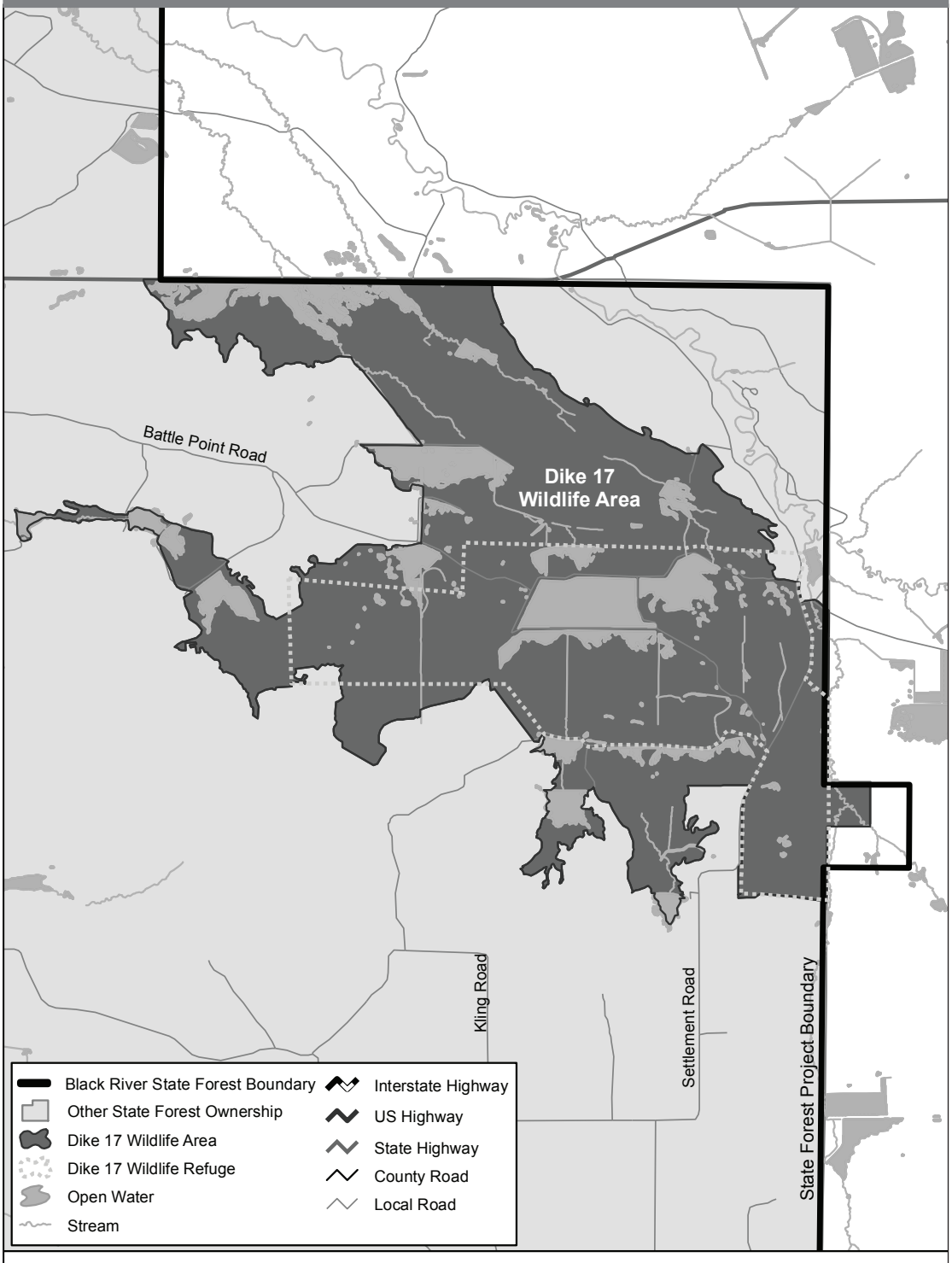
AREA 5 SUMMARY

- Expand the existing wildlife area from 3,700 acres to 4,999 acres.
- Continue focus on waterfowl management through maintenance and manipulation of flowages and impounded water.
- Continue Sharp-tailed Grouse habitat management.
- Perpetuate open landscape through aggressive timber harvesting and prescribed burning.
- Provide hunting, fishing, and trapping opportunities, as well as compatible uses such as hiking, picnicking, and wildlife viewing.
- Increase acreage open to hunting.
- Provide opportunities to manage for threatened and endangered species.

AREA 5 LOCATOR MAP

DIKE 17 WILDLIFE HABITAT MANAGEMENT AREA

MAP 2.9 DIKE 17 WILDLIFE HABITAT MANAGEMENT AREA



DIKE 17 WILDLIFE HABITAT MANAGEMENT AREA

Area Specific Resource Management Prescriptions

- Increase the existing wildlife management area from 3,700 acres to 4,999 acres to include additional adjacent flowages and lands on the state forest that are suitable for management as open-land brush/grass.
- Maintain established open brush/grass cover type at a maximum height of approximately five feet.
- Convert and maintain up to 10% of forested sites to open brush/grass cover type. Use aggressive management techniques such as cutting/shearing, timber harvesting, prescribed burning, herbicides, and planting native prairie plants.
- Retain and maintain all flowages within the management area, unless abandonment, on a case-by-case basis, is deemed appropriate by a multi-resource team. Dike maintenance includes cutting, shearing, mowing, and similar mechanical treatments, repair of rodent or other damage, and repair or replacement of water control structures.
- Manipulate water levels to provide optimum waterfowl habitat by maintaining pools with a water depth from three to six feet, and performing periodic full drawdowns of each pool to promote plant growth approximately every four years.
- Attempt to establish wild rice in flowages for a renewable food resource for waterfowl and for recreational and cultural gathering.
- Plant up to 128 acres of food plots that are consistent with forest certification requirements.
- Maintain a network of primitive or lightly developed roads for management access.
- Recommend an increase in the acreage open for hunting and other public uses by decreasing the acreage of the wildlife refuge. This is based on a lower number of birds currently migrating compared to when the refuge was first established. Wildlife refuge sizes and boundaries are outside of the scope of this master plan and are designated in Administrative Code. This change is a recommendation only.
- Maintain at least one parking lot for public access to the area.
- Maintain public access into the management area by foot travel only.
- Provide interpretive signs and materials for public information about the management area.
- Promote wildlife watching and nature study.
- Evaluate the use of the Dike 17 Wildlife Area observation tower and determine the need for renovation, replacement, or removal.

FIGURE 2.6 DIKE 17 CURRENT LAND COVER

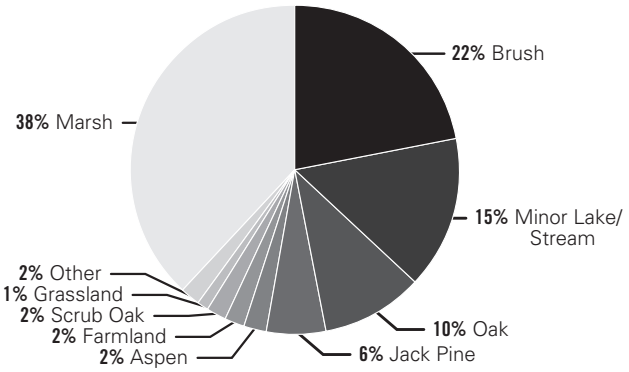
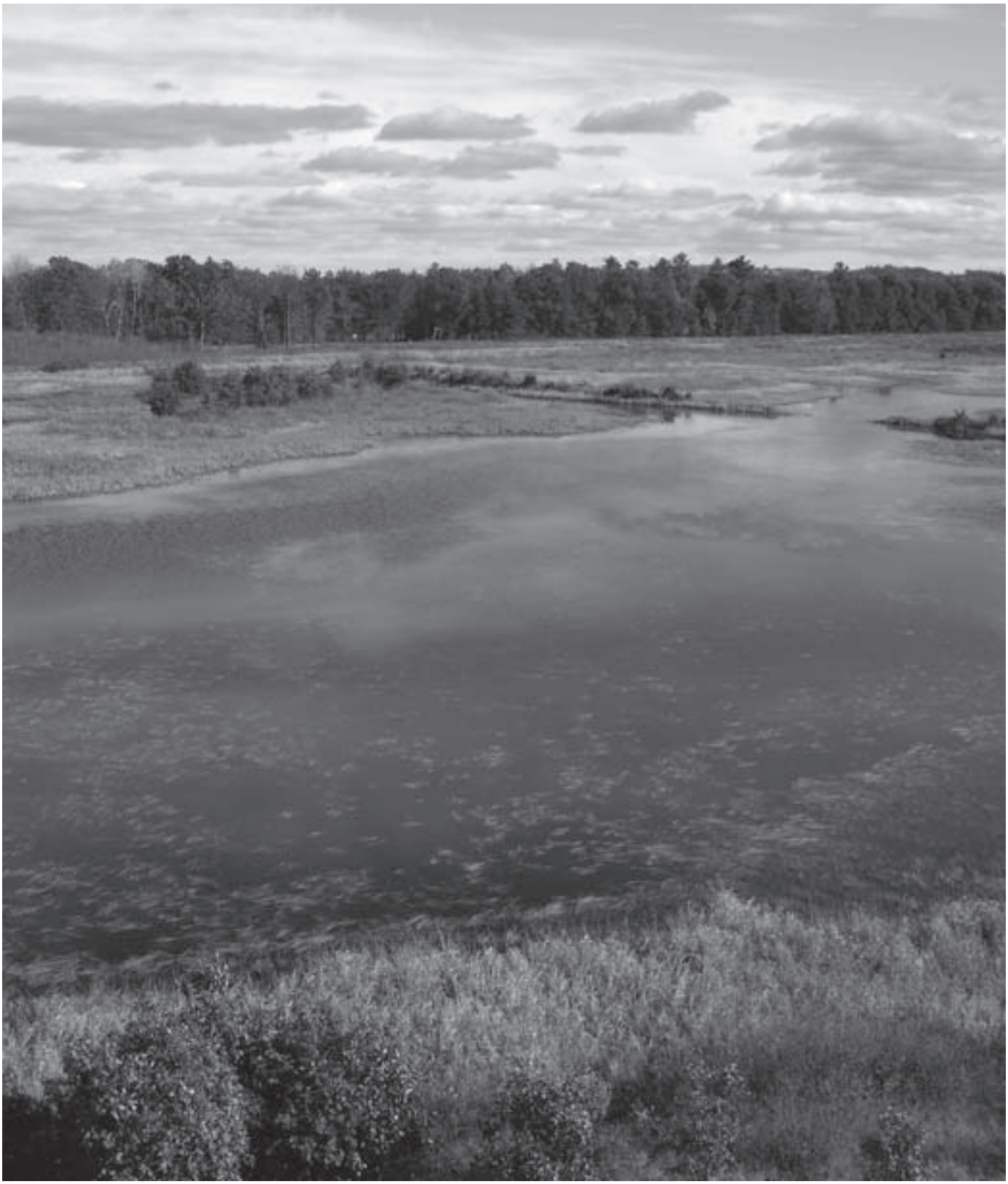


TABLE 2.8 DIKE 17 CURRENT AND PREDICTED LAND COVER

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
Forested Types				
Oak	478	10%	430	9%
Jack Pine	307	6%	277	5%
Aspen	129	2%	129	2%
Scrub Oak	84	2%	84	2%
Non-forested Types				
Marsh	1,878	38%	1,878	38%
Brush	1,089	22%	1,089	22%
Minor Lake/Stream	769	15%	769	15%
Farmland	128	2%	0	0%
Other	83	2%	83	2%
Grassland	54	1%	260	5%
Total	**4,999**	**100%**	**4,999**	**100%**

DIKE 17 WILDLIFE HABITAT MANAGEMENT AREA



NATIVE COMMUNITY MANAGEMENT AREAS

Native community management areas are managed with the primary objective of representing, restoring, and perpetuating native plant and animal communities, whether upland, wetland, or aquatic and other aspects of native biological diversity. Management activities are designed to achieve land management objectives through natural processes (passive management) whenever possible and active management techniques that mimic natural processes.

Native community management areas will be managed to provide the full range of native plant and animal communities found on the Black River State Forest. Only those areas of highest value for protection or community restoration were selected. One of the common objectives for these areas is to maintain and develop older, more diverse, closed canopy forests.

Please refer to the General Forest Management Prescriptions on page 98 for prescriptions by forest type. These prescriptions apply and all management activities are authorized, except as noted below for these management areas.

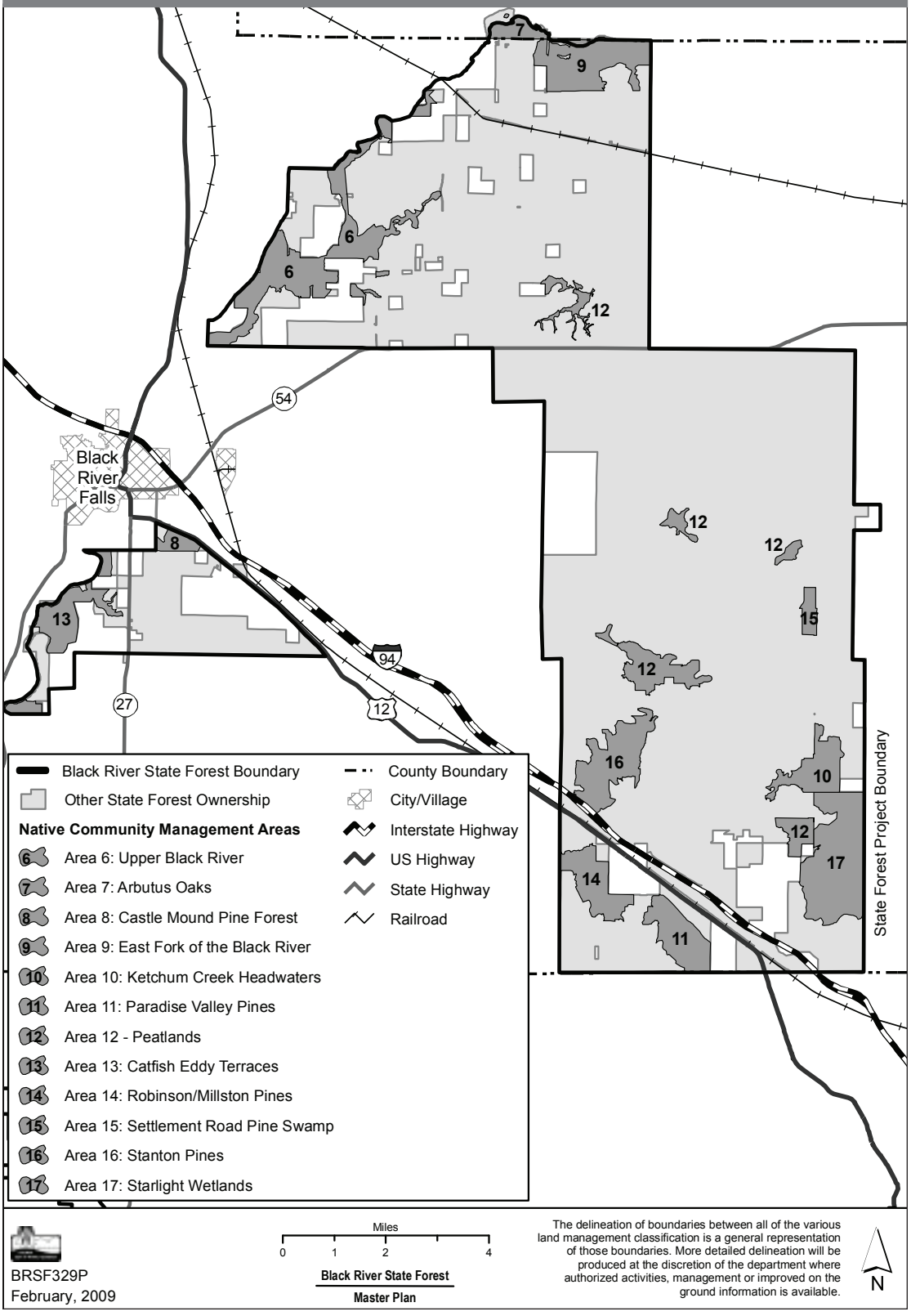
TABLE 2.9 NATIVE COMMUNITY MANAGEMENT AREAS

Area #	Native Community Management Areas	Acres	Active Managment (Acres)	Passive Managment (Acres)
6	Upper Black River	1,909	455	1,454
7	Arbutus Oaks	215	—	215
8	Castle Mound Pine Forest	171	53	118
9	East Fork of the Black River	1,083	575	508
10	Ketchum Creek Headwaters	581	284	297
11	Paradise Valley Pines	669	595	74
12	Peatlands	1,203	—	1,203
13	Catfish Eddy Terraces	745	445	300
14	Robinson/Millston Pines	626	500	126
15	Settlement Road Pine Swamp	156	43	113
16	Stanton Pines	971	971	—
17	Starlight Wetlands	1,650	818	832
	Total	**9,979**	**4,739**	**5,240**

** Includes a designated State Natural Area*

NATIVE COMMUNITY MANAGEMENT AREAS

MAP 2.10 NATIVE COMMUNITY MANAGEMENT AREAS



AREA 6: UPPER BLACK RIVER

This 1,909 acre native community management area is primarily located within a narrow corridor along the Black River, Morrison Creek, Valentine Creek, and Dickey Creek, and generally between County Highway E to the west, Bottoms Road to the south, and County Highway K to the east and north. This is a highly complex system significant for aquatic and terrestrial features, and diverse in terms of hydrology, topography, soils, animals, and vegetation. Morrison Creek is a high-quality example of a fast-soft-warm water stream with excellent macroinvertebrate diversity, including one globally imperiled and one globally rare species. Portions of Morrison Creek, Valentine Creek, Dickey Creek, and Halls Creek flow through steep-walled gorges of geologically unique Cambrian sandstone. The more extensive natural communities of the site are floodplain forest, southern mesic forest, northern dry-mesic forest, and southern dry-mesic forest. Small patch natural community types include dry cliff, moist cliff, forested seep, hemlock relict, white pine-red maple swamp, and alder thicket. The area is known to contain numerous rare species (as identified in the Biotic Inventory) including six state threatened vertebrate animals, one state endangered freshwater mussel, two state endangered plants, two state threatened plants, and numerous Species of Greatest Conservation Need and Species of Special Concern. The area is also significant for its scenic and recreational attributes.

Description of the Forest Resource

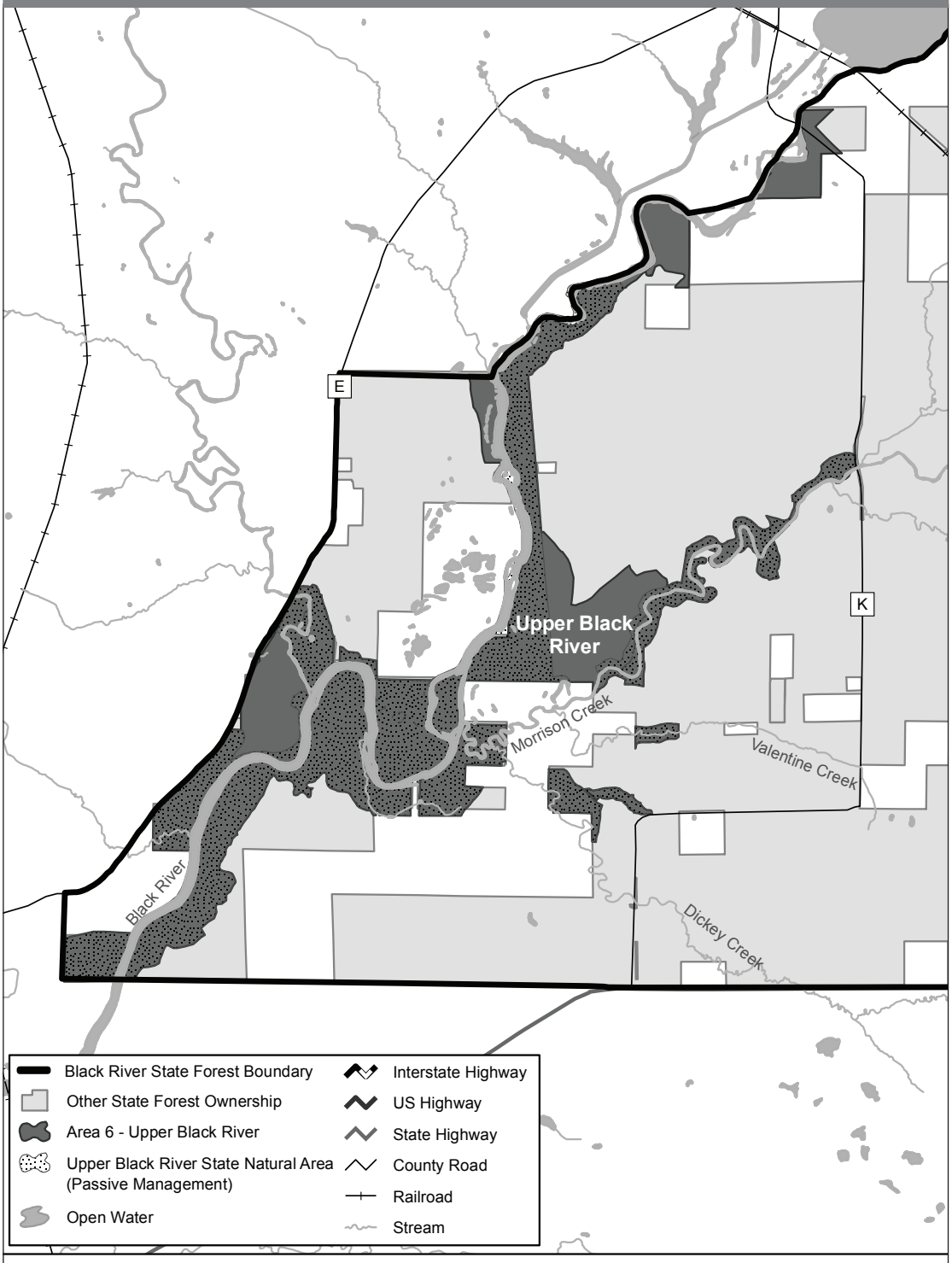
Due to landscape features like steep slopes, cliffs, springs, seeps, and islands, portions of this area have experienced little or no timber harvesting. The most common timber types in

AREA 6 SUMMARY

- Maintain and develop older, diverse, closed canopy forests representing later successional stages, including areas of old growth.
- Protect scenic qualities along the Black River and its major tributaries, and maintain an area of unfragmented bottomland forest.
- Protect, manage, and enhance natural communities and habitat for key species identified in the Biotic Inventory and for ecological values.
- Protect and enhance water resources.
- Designate a 1,454 acre State Natural Area.

AREA 6 LOCATOR MAP

MAP 2.11 UPPER BLACK RIVER



upland areas are white pine and oak and, to a lesser extent, jack pine, red pine, aspen, and red maple. Tree species in the lowland areas include silver maple, red maple, sugar maple, river birch, yellow birch, black ash, hackberry, bitternut hickory, butternut, and American elm as well as white pine, oak, and some basswood. The site contains the only known hemlock relict within the Black River State Forest.

Long-Term Management Objectives (100 years)
Provide a large area of structurally and functionally diverse, older, intact, connected forest comprised of old growth mixed hardwood and conifer species. Preserve coarse woody debris and standing dead snags for old growth habitat and structural diversity. Protect, manage, and enhance natural communities for ecological values and rare species habitat needs.

Short-Term Management Objectives (50 years)

- Develop and maintain an older, closed canopy forest of longer-lived species such as white pine in the uplands and maple, yellow birch, oak, and white pine in the lowlands.
- Enhance forest structural diversity and development of old growth characteristics such as large diameter trees, standing dead snags, and coarse woody debris.
- Protect water quality through protection and maintenance of riparian habitat and seeps consistent with the Best Management Practices (BMPs) for water quality.
- Protect multiple scenic and aesthetic qualities of the Black River and its major tributaries.

Area Specific Resource Management Prescriptions
Active Management (455 acres)

- Decrease short-lived tree species, such as aspen, and increase longer-lived species, such as white pine, primarily through thinning and natural conversion.
- Promote the growth and retention of large white pine, oak, and other hardwood species through techniques such as thinning, extended rotation, and managed old growth. Follow the DNR Old Growth and Old Forest Handbook management guidelines, particularly related to "Managed Old-Forests."Monitor composition and structure changes to aid future management decisions.
- Retain snags and coarse woody debris to promote old growth characteristics when retention does not conflict with other forest management activities or present hazards.
- For the riparian lands along the Black River, follow the DNR Silviculture and Forest Aesthetics Handbook guidelines for Class A Scenic Management Zones.

FIGURE 2.7 UPPER BLACK RIVER CURRENT LAND COVER

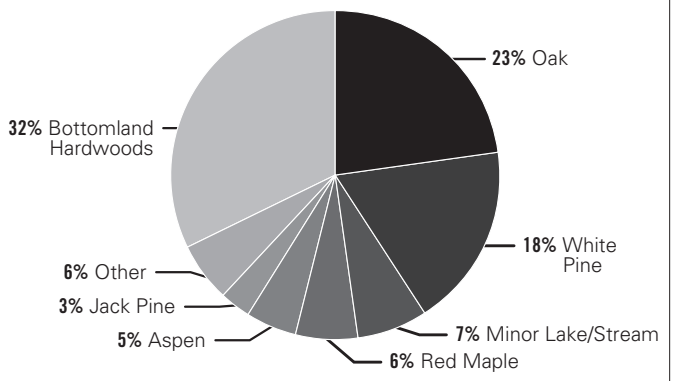


TABLE 2.10 UPPER BLACK RIVER CURRENT AND PREDICTED LAND COVER

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
Forested Types				
Bottomland Hardwoods	604	32%	604	32%
Oak	436	23%	390	20%
White Pine	345	18%	412	22%
Red Maple	107	6%	126	7%
Aspen	105	5%	65	3%
Jack Pine	68	3%	68	3%
Non-forested Types				
Minor Lake/Stream	136	7%	136	7%
Other	108	6%	108	6%
Total	**1,909**	**100%**	**1,909**	**100%**

Area Specific Resource Management Prescriptions
Passive Management (1,454 acres)

- Control of invasive species, non-commercial forest practices, and prescribed fire may occur.
- Designate the 1,454 acre Upper Black River State Natural Area.

UPPER BLACK RIVER

AREA 7: ARBUTUS OAKS

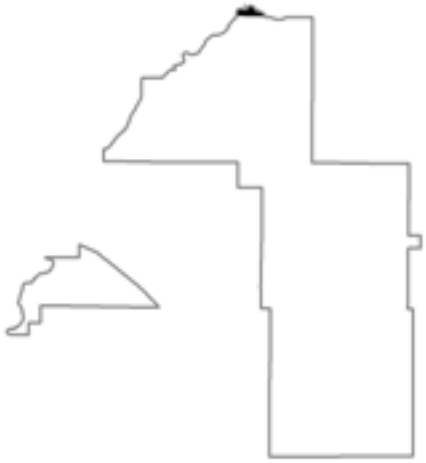
This 215 acre native community management area is primarily located south of Lake Arbutus and between Campground Road, Clay School Road, and East Fork Road. Although small, this site is important for its scenic, aquatic, and terrestrial features. It represents over one mile of undeveloped lakeshore with both oak and white pine that are over 90 years old. Dominant natural communities of the site are southern dry-mesic forest and a small area of white pine-red maple swamp. One state threatened animal is known to exist in the area as indentified in the Biotic Inventory. It is likely that there are also other rare species in the area.

Description of the Forest Resource
The most common timber types in this area are oak and white pine.

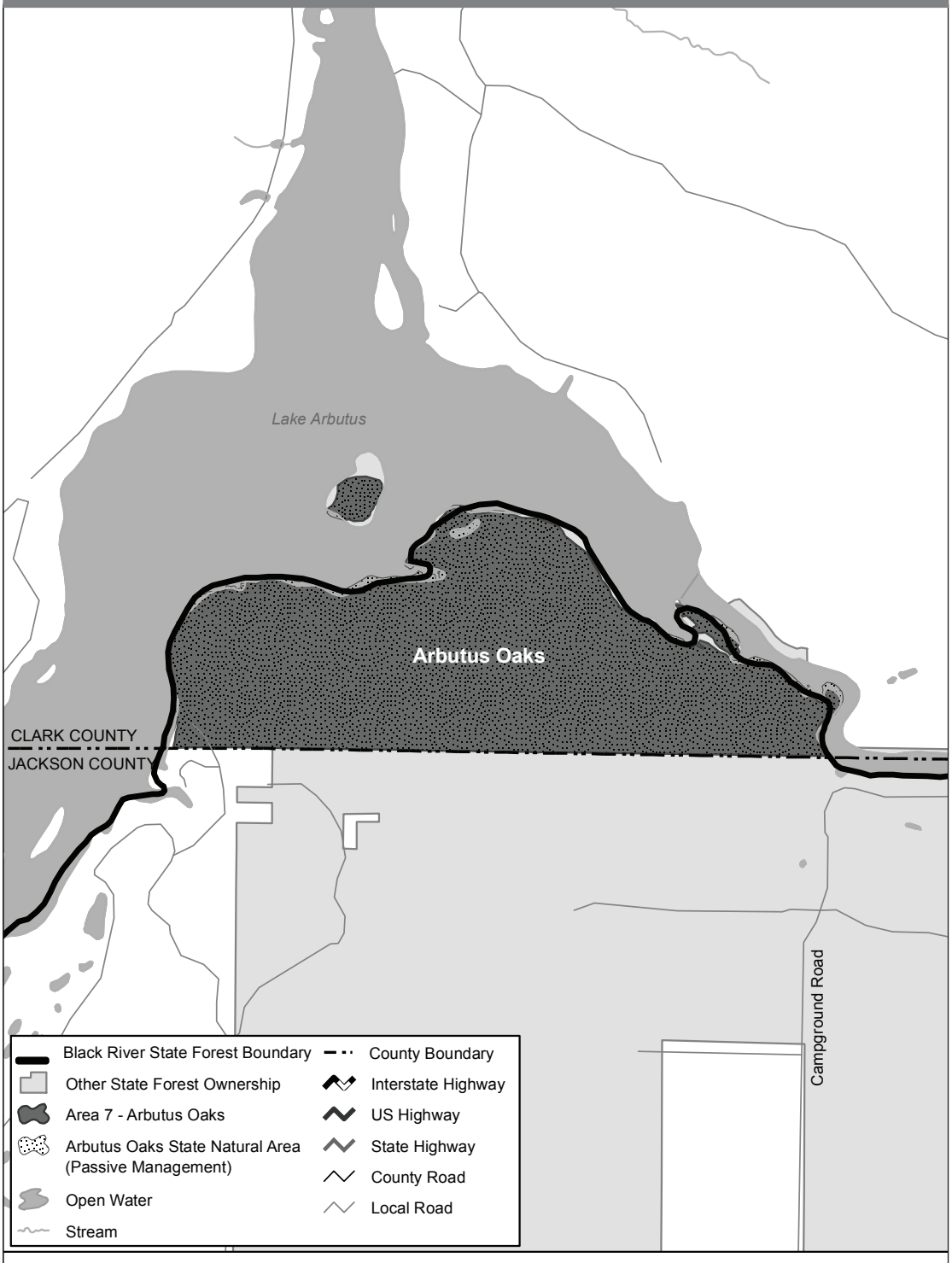
AREA 7 SUMMARY

- Protect multiple scenic and aesthetic qualities of the site.
- Protect and enhance water resources.
- Protect, manage and enhance natural communities for ecological values and rare species identified in the Biotic Inventory.
- Maintain and develop older closed canopy forests, including some areas for potential old growth.

AREA 7 LOCATOR MAP



MAP 2.12 ARBUTUS OAKS



Long-Term Management Objectives (100 years)
Provide a large area of structurally and functionally diverse, older, intact, connected forest comprised of old growth mixed hardwood and conifer species. Preserve coarse woody debris and standing dead snags for old growth habitat and structural diversity.

Short-Term Management Objectives (50 years)
- Protect the scenic and aesthetic qualities of the site, including the shoreline of Lake Arbutus.
- Develop and maintain an older, closed canopy forest of longer-lived species such as oak and white pine.
- Enhance forest structural diversity and development of old growth characteristics such as large diameter trees, standing dead snags, and coarse woody debris.
- Protect water quality through protection and maintenance of riparian habitat and seeps consistent with Best Management Practices (BMPs) for water quality.

Area Specific Resource Management Prescriptions
Active Management
There are no acres in this designation.

Area Specific Resource Management Prescriptions
Passive Management (215 acres)
- Allow old growth and old forest characteristics to develop, using the guidelines in the DNR Old Growth and Old Forest Handbook.
- Retain snags and coarse woody debris to promote old growth characteristics when retention does not present hazards.
- For the shoreline along Lake Arbutus, follow the DNR Silviculture and Forest Aesthetics Handbook guidelines for Class A Scenic Management Zones.
- Control of invasive species, non-commercial forest practices, and prescribed fire may occur.
- Designate the 215 acre Arbutus Oaks State Natural Area.

FIGURE 2.8 ARBUTUS OAKS CURRENT LAND COVER

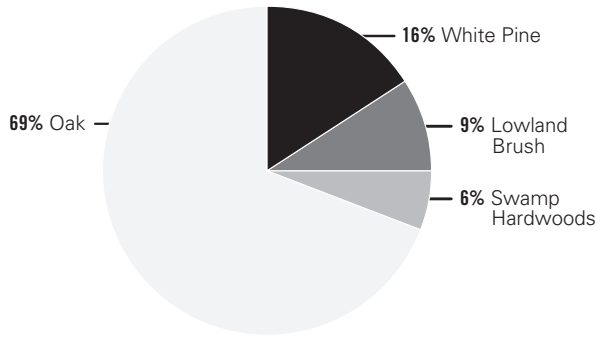


TABLE 2.11 ARBUTUS OAKS CURRENT AND PREDICTED LAND COVER

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
Forested Types				
Oak	148	69%	128	60%
White Pine	35	16%	55	25%
Swamp Hardwoods	12	6%	12	6%
Non-forested Types				
Lowland Brush	20	9%	20	9%
Total	**215**	**100%**	**215**	**100%**

AREA 8: CASTLE MOUND PINE FOREST

This 171 acre native community management area is located between Highway 12 to the north, 7th Street to the south, and Castle Mound Campground to the northeast. This site is an old forest of white pine and red pine nearing old growth conditions. It covers the slopes and crest of a one mile long, 200 foot high Cambrian sandstone butte that runs northwest to southeast. The dominant natural community is northern dry-mesic forest featuring several rare plants, including one that is state endangered. The site includes resident bird life with many northern species such as Pine, Black-throated Green and Blackburnian Warblers, Red-breasted Nuthatch, Northern Raven, and Solitary Vireo. The area is also significant for its scenic and recreational attributes.

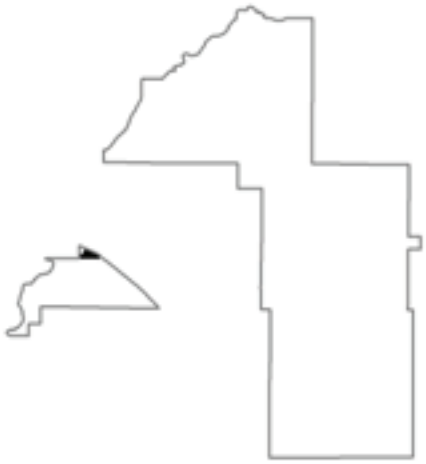
Description of the Forest Resource

Timber harvesting in this area has been limited due to steep slopes and cliffs, scenic and recreational attributes, and the State Natural Area designation. The most common timber types are white pine, red pine, red oak, and, to a lesser extent, jack pine, aspen, and red maple.

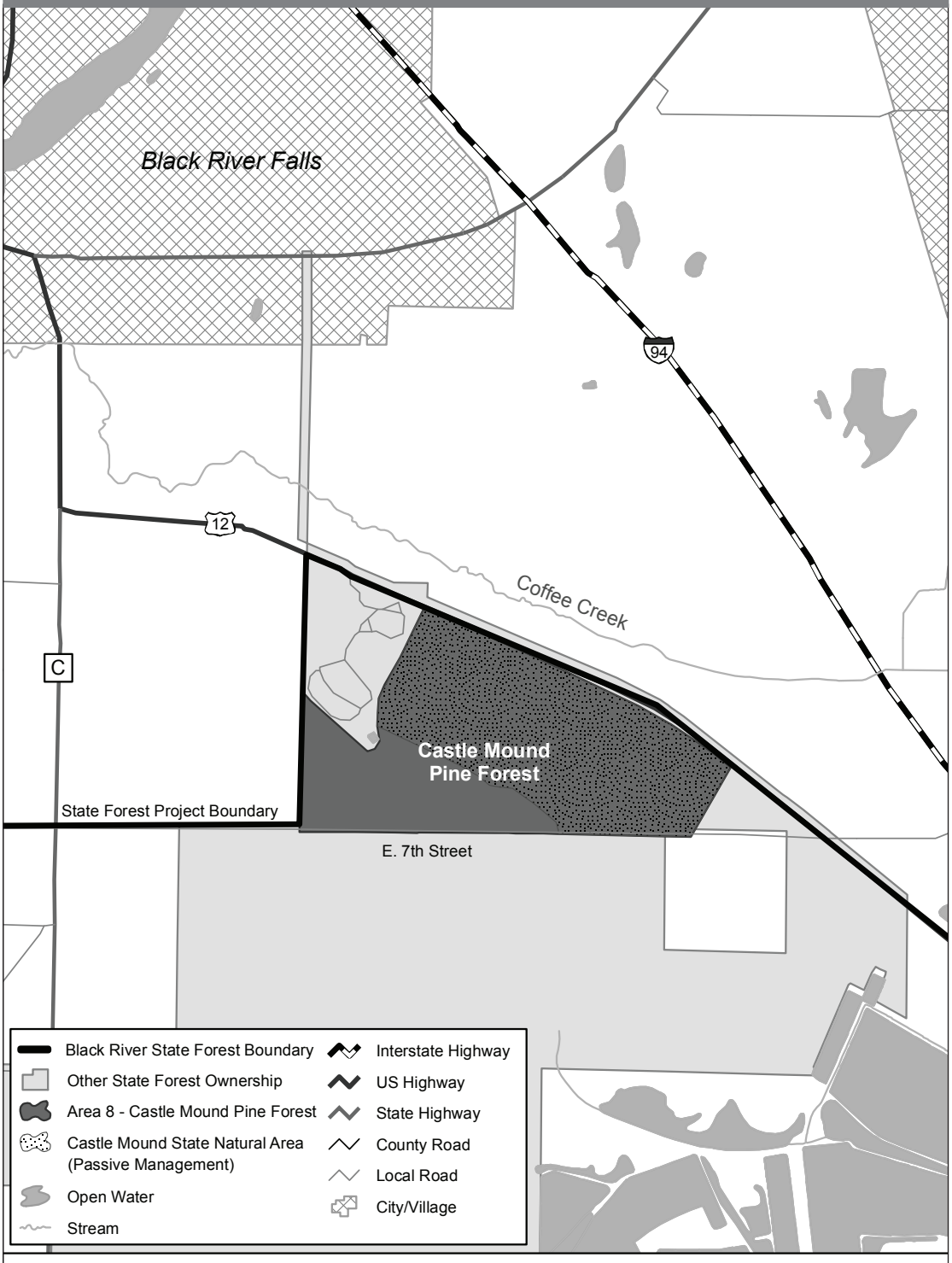
AREA 8 SUMMARY

- Maintain and develop older, closed canopy forests, including potential old growth.
- Protect, manage, and enhance habitat for key species identified in the Biotic Inventory.
- Protect and enhance scenic, recreational, and aesthetic values.
- Designate a 118 acre State Natural Area (91 acres of existing SNA, 27 acres of new SNA).

AREA 8 LOCATOR MAP



MAP 2.13 CASTLE MOUND PINE FOREST



Long-Term Management Objectives (100 years)
Provide a structurally and functionally diverse, older, intact, connected forest on an upland site comprised of old growth mixed hardwood and conifer species. Preserve coarse woody debris and standing dead snags for old growth habitat and structural diversity. Protect, manage, and enhance the natural community for ecological values and rare species habitat needs.

Short-Term Management Objectives (50 years)
- Develop and maintain an older, closed canopy forest of longer-lived species such as white pine and red pine.
- Enhance forest structural diversity and development of old growth characteristics such as large diameter trees, standing dead snags, and coarse woody debris.
- Protect multiple scenic, aesthetic, and recreational qualities of the site.

Area Specific Resource Management Prescriptions
Active Management (53 acres)
- Decrease short-lived species, such as aspen, and increase longer-lived species, such as white pine, red pine, and oak, primarily through natural conversion and thinning.
- Promote the growth and retention of large white pine, red pine, and oak through techniques such as thinning, extended rotation, and managed old growth. Follow the DNR Old Growth and Old Forest Handbook management guidelines, particularly related to Managed Old Growth forests. Monitor composition and structure changes to aid future management decisions.
- Retain snags and coarse woody debris to promote old growth characteristics whenever their retention does not present hazards or conflict with other forest management activities.
- Follow the DNR Silviculture and Forest Aesthetics Handbook guidelines to manage the scenic, aesthetic, and recreational qualities of the site.
- Control buckthorn and other invasive plant infestations.

Area Specific Resource Management Prescriptions
Passive Management (118 acres)
- Control of invasive species, non-commercial forest practices, and prescribed fire may occur.
- Designate the 118 acre Castle Mound State Natural Area (91 acres of existing SNA, 27 acres of new SNA).

FIGURE 2.9 CASTLE MOUND PINE FOREST CURRENT LAND COVER

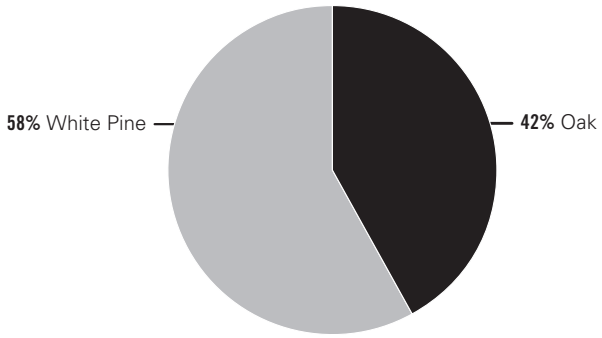
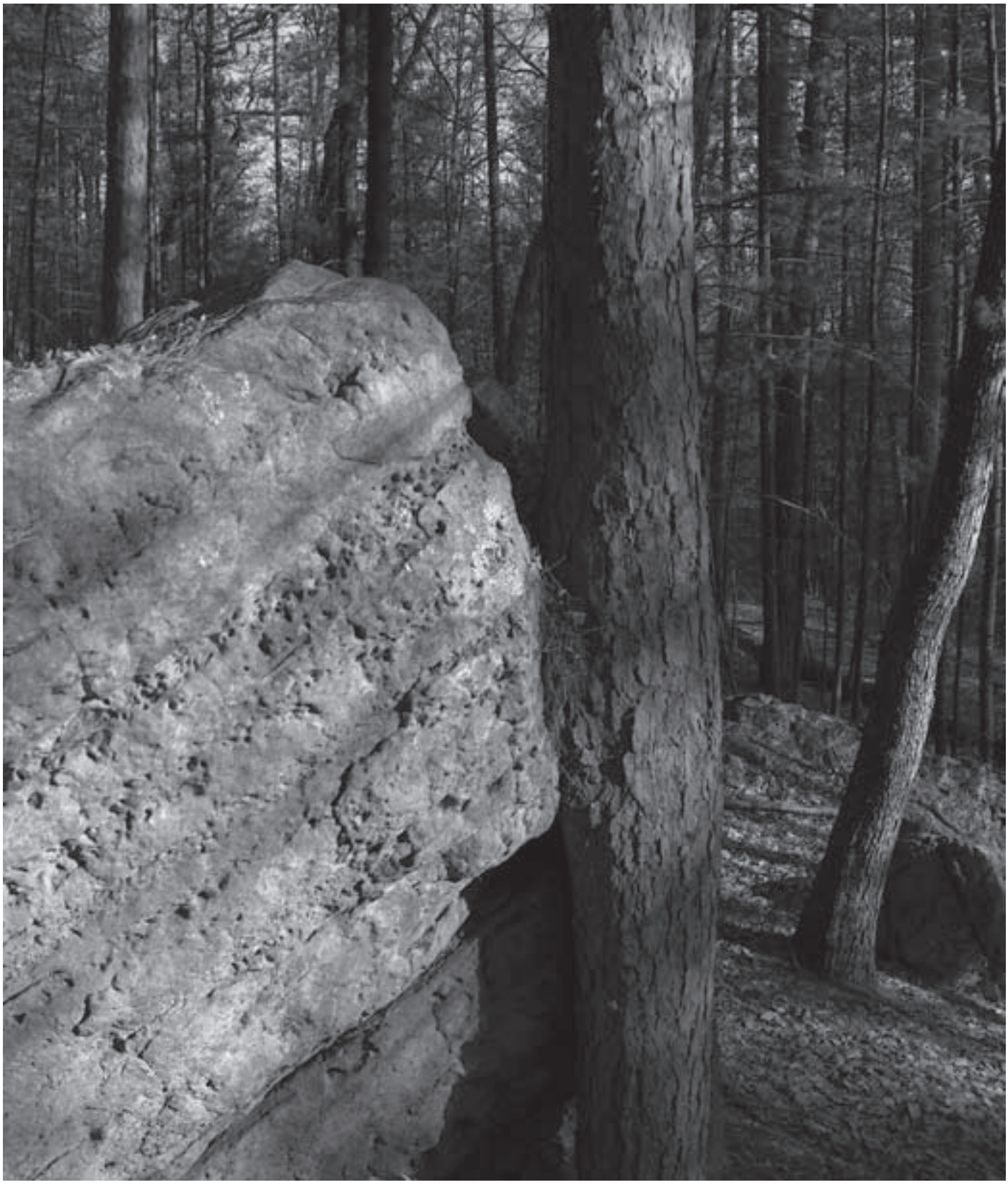


TABLE 2.12 CASTLE MOUND PINE FOREST CURRENT AND PREDICTED LAND COVER

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
Forested Types				
White Pine	99	58%	99	58%
Oak	72	42%	72	42%
Total	**171**	**100%**	**171**	**100%**



AREA 9: EAST FORK OF THE BLACK RIVER

This 1,083 acre native community management area is primarily located south of the East Fork of the Black River between Campground Road, Clay School Road, and East Fork Road. A few small parcels are included north of the East Fork of the Black River. This is a complex system significant for both its aquatic and terrestrial features, and diverse in terms of hydrology, topography, soils, animals, and vegetation. The East Fork of the Black River contains excellent macroinvertebrate diversity, including 10 Species of Special Concern, three that are globally imperiled, as well as three special concern freshwater mussel species. The southern extremity of the Canadian shield is exposed here, exemplified by pre-Cambrian granitic bedrock outcroppings that occur along the shores. The more dominant natural communities of the site are white pine-red maple swamp and central sands pine-oak forest. Small patch natural community types that are also important here include tamarack swamp, northern sedge meadow, and alder thicket. According to the Biotic Inventory, the area contains two state threatened birds, three plant Species of Special Concern, and several Species of Greatest Conservation Need. The diversity of northern bird species is also significant here and includes Pine, Black-throated Green, Blackburnian, Nashville, Golden-winged, and Canada Warblers, as well as Hermit Thrush, Veery, and Northern Raven. The area is also significant for its scenic attributes and adjacent recreational areas.

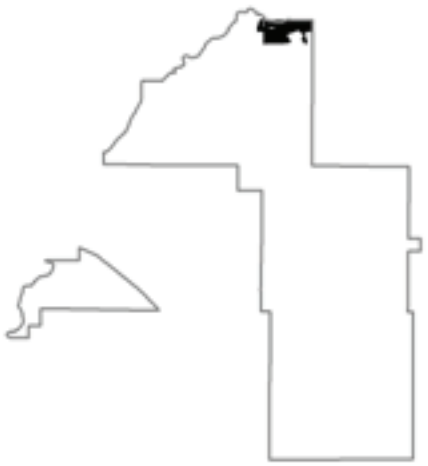
Description of the Forest Resource

The most common timber type is white pine and, to a lesser extent, oak, jack pine, tamarack, and red maple. The site also contains several red pine plantations.

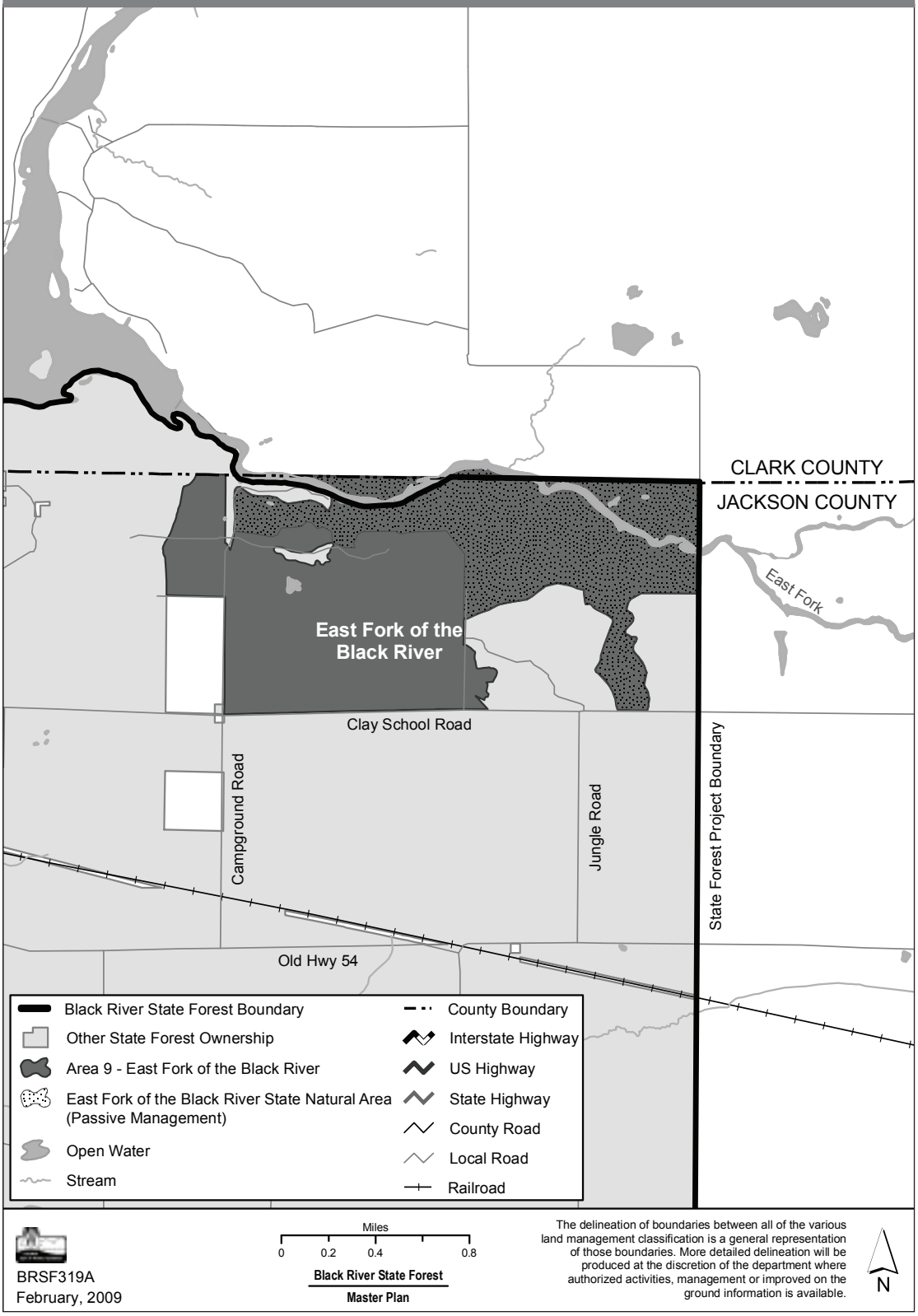
AREA 9 SUMMARY

- Maintain and develop older closed canopy forest, including potential areas for old growth.
- Manage and maintain a large area of un-fragmented conifer/mixed forest.
- Protect, manage, and enhance habitat for key species identified in the Biotic Inventory.
- Protect and enhance water resources and areas with scenic and aesthetic values.
- Manage red pine plantations to create a natural appearance.
- Designate a 471 acre State Natural Area.

AREA 9 LOCATOR MAP



MAP 2.14 EAST FORK OF THE BLACK RIVER



BRSF319A
February, 2009

The delineation of boundaries between all of the various land management classification is a general representation of those boundaries. More detailed delineation will be produced at the discretion of the department where authorized activities, management or improved on the ground information is available.

Long-Term Management Objectives (100 years)
Provide a large area of structurally and functionally diverse, older, intact, connected forest comprised of old growth pine, mixed hardwoods, and mixed conifer species. Preserve coarse woody debris and standing dead snags for old growth habitat and structural diversity. Protect, manage, and enhance natural communities for ecological values and rare species habitat needs.

Short-Term Management Objectives (50 years)
- Develop and maintain an older, closed canopy forest of longer-lived species such as white pine and oak.
- Enhance forest structural diversity and development of old growth characteristics such as large diameter trees, standing dead snags, and coarse woody debris.
- Protect water quality through protection and maintenance of riparian habitat and seeps consistent with Best Management Practices (BMPs) for water quality.
- Protect multiple scenic, aesthetic, and recreational qualities of the East Fork of the Black River.

Area Specific Resource Management Prescriptions
Active Management (575 acres)
- Decrease short-lived species, such as aspen, and increase longer-lived species, such as white pine, primarily through thinning and natural conversion.
- Promote the growth and retention of large white pine, oak, and other hardwood species through techniques such as thinning, extended rotation, and managed old growth. Follow the DNR Old Growth and Old Forest Handbook management guidelines, particularly related to Managed Old Growth forests.
- Thin specific stands in a way that maintains closed canopy conditions within one third of the actively managed area.
- Actively manage red pine plantations primarily through thinning and natural regeneration techniques to create stands with a natural appearance and large diameter trees.
- Retain snags and coarse woody debris to promote old growth characteristics when retention does not conflict with other forest management activities or present hazards.
- For the riparian lands along the East Fork of the Black River, follow the DNR Silviculture and Forest Aesthetics Handbook guidelines for Class A Scenic Management Zones.

Area Specific Resource Management Prescriptions
Passive Management (508 acres)
- Designate the 471 acre East Fork of the Black River State Natural Area.

FIGURE 2.10 EAST FORK OF THE BLACK RIVER CURRENT LAND COVER

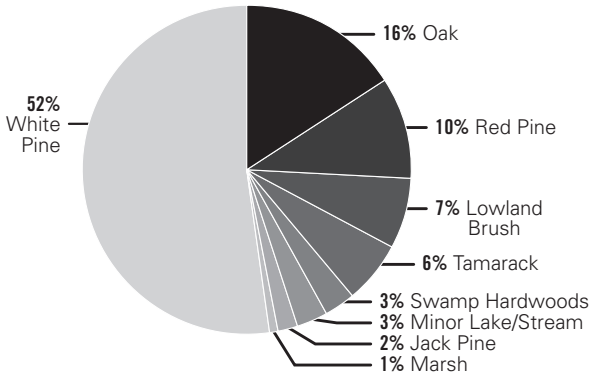
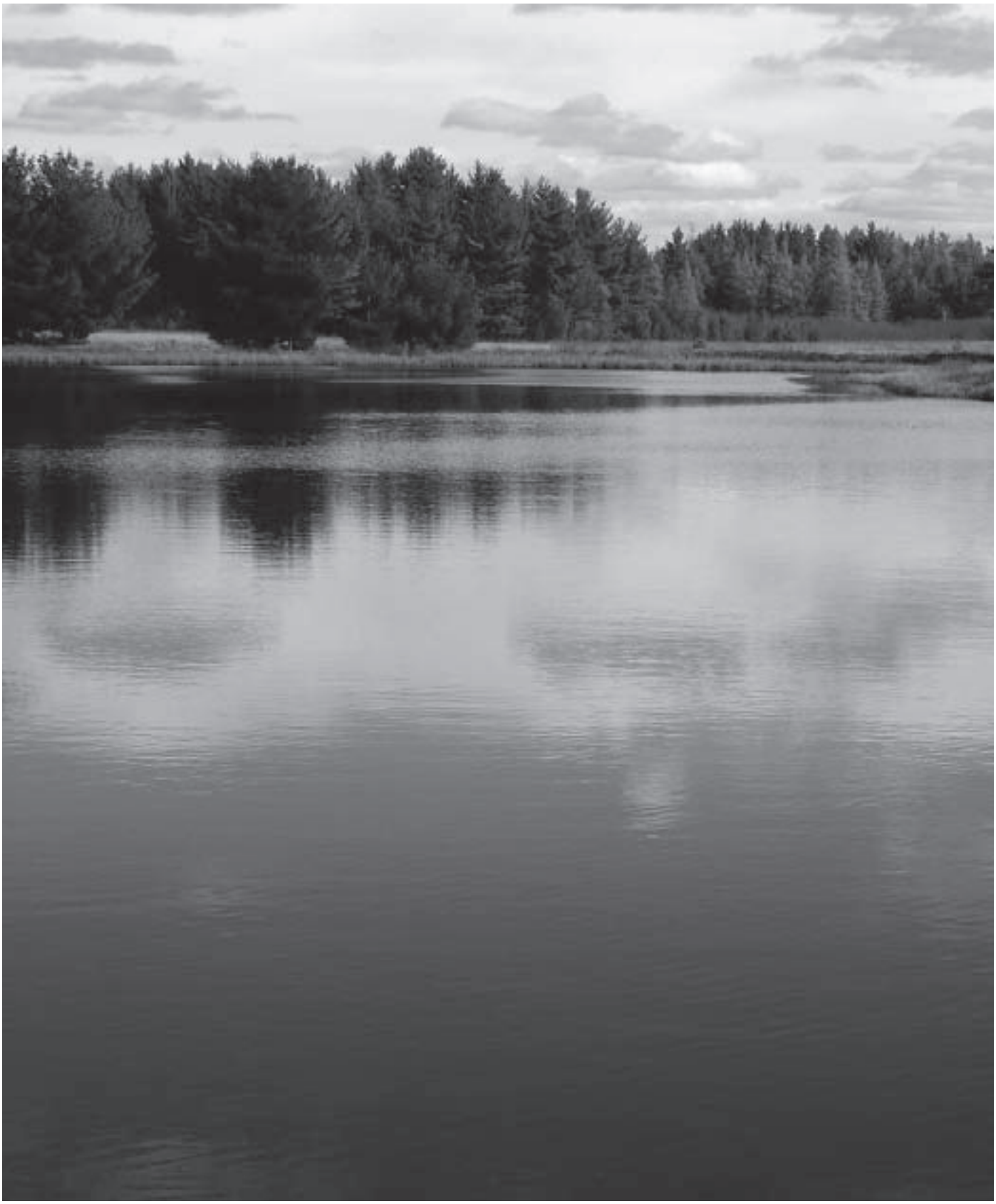


TABLE 2.13 EAST FORK OF THE BLACK RIVER CURRENT AND PREDICTED LAND COVER

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
Forested Types				
White Pine	560	52%	605	56%
Oak	174	16%	148	14%
Red Pine	112	10%	112	10%
Tamarack	64	6%	64	6%
Swamp Hardwoods	33	3%	33	3%
Jack Pine	19	2%	0	0%
Non-forested Types				
Lowland Brush	76	7%	76	7%
Minor Lake/Stream	31	3%	31	3%
Marsh	14	1%	14	1%
Total	**1,083**	**100%**	**1,083**	**100%**



AREA 10: KETCHUM CREEK HEADWATERS

This 581 acre native community management area is located immediately north and west of the intersection of County Trunk O and Smrekar Road. This is a complex system significant for its aquatic and terrestrial features, and diverse in terms of hydrology, soils, animals, and vegetation. The site consists of three natural communities connecting the uplands to the northeast, through the headwaters of Ketchum Creek, to the lowlands of Whitney Marsh to the southwest. The dominant natural communities that make up this continuum are northern dry-mesic forest, white pine-red maple swamp, and central poor fen. According to the Biotic Inventory, this area is known to contain one state threatened animal, five animal Species of Special Concern, six plant Species of Special Concern, and several Species of Greatest Conservation Need. The diversity of northern bird species is also significant here and includes Pine, Black-throated Green, and Blackburnian Warblers, as well as Veery, Red-breasted Nuthatch and Northern Raven. The area is significant for its aesthetic attributes.

Description of the Forest Resource
The most common timber types are white pine, oak, and tamarack, and, to a lesser extent aspen. Other species also present are red maple and yellow birch.

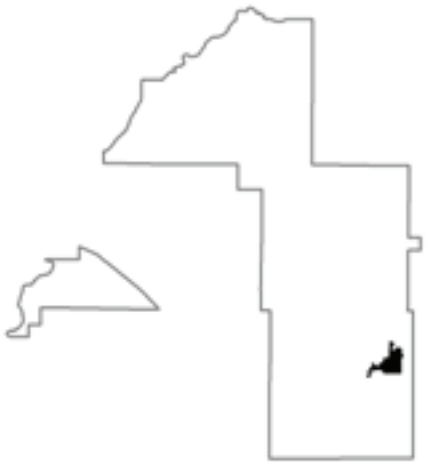
Long-Term Management Objectives (100 years)
Maintain and enhance a large area of structurally and functionally diverse, older, intact, connected forest comprised of old growth mixed hardwood and conifer species. Preserve coarse woody debris and standing dead snags to promote old growth habitat and structural diversity. Protect, manage, and enhance natural communities for ecological values and rare species habitat needs.

Short-Term Management Objectives (50 years)
- Develop and maintain an older, closed canopy forest of longer-lived species such as white pine and oak.
- Enhance forest structural diversity and development of old growth characteristics such as large diameter trees, standing dead snags, and coarse woody debris.
- Protect water quality through protection and maintenance of wetland habitat and seeps consistent with Best Management Practices (BMPs) for water quality.
- Protect multiple scenic and aesthetic qualities of the site.

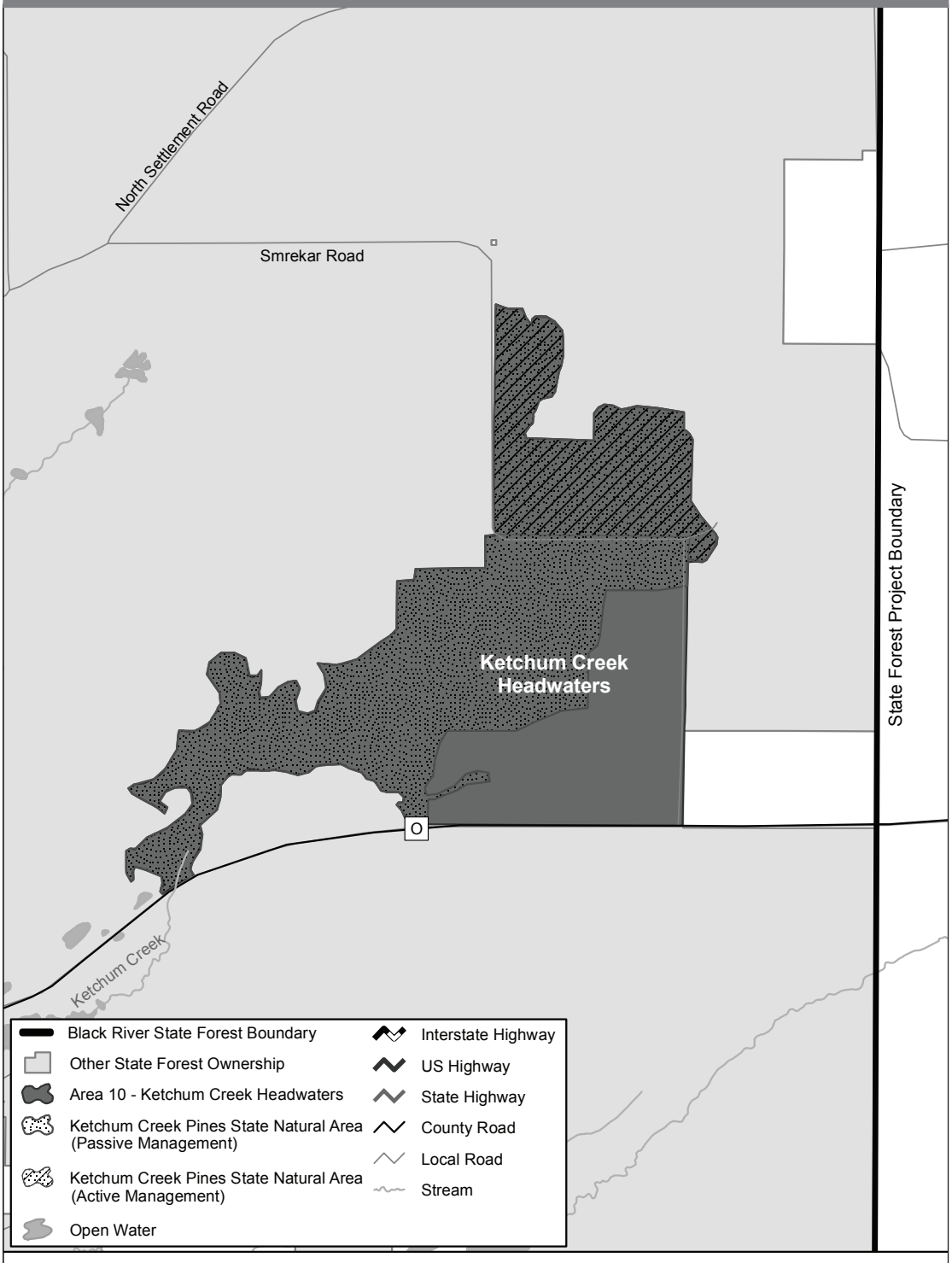
AREA 10 SUMMARY

- Maintain and develop older closed canopy forest, including some areas for potential old growth.
- Manage and maintain a large area of un-fragmented conifer/hardwood forest.
- Protect, manage, and enhance habitat for key species identified in the Biotic Inventory.
- Protect and enhance water resources, especially wetlands and seeps.
- Protect multiple scenic and aesthetic values of the site.
- Designate a 424 acre State Natural Area (140 acres of existing SNA, 284 acres of new SNA).

AREA 10 LOCATOR MAP



MAP 2.15 KETCHUM CREEK HEADWATERS



Area Specific Resource Management Prescriptions
Active Management (284 acres)

- Decrease short-lived species, such as aspen, and increase longer-lived species, such as white pine and oak, primarily through thinning and natural conversion.
- Promote the growth and retention of large white pine and oak through techniques such as thinning, extended rotation, and managed old growth. Follow the DNR Old Growth and Old Forest Handbook management guidelines, particularly related to Managed Old Growth forests. Monitor composition and structure changes to aid future management decisions.
- Thin specific stands in a way that maintains closed canopy conditions within a majority of the native community management area.
- Retain snags and coarse woody debris to promote old growth characteristics whenever their retention does not conflict with other forest management activities or present hazards.
- Follow the DNR Silviculture and Forest Aesthetics Handbook to manage the scenic and aesthetic qualities of the site.
- Designate 127 acres of the 424 acre Ketchum Creek Pines State Natural Area.

Area Specific Resource Management Prescriptions
Passive Management (297 acres)

- Non-commercial forest practices, prescribed fire, and control of invasive species may occur.
- Designate 297 acres of the 424 acre Ketchum Creek Pines State Natural Area (140 acres of existing SNA).

FIGURE 2.11 KETCHUM CREEK HEADWATERS CURRENT LAND COVER

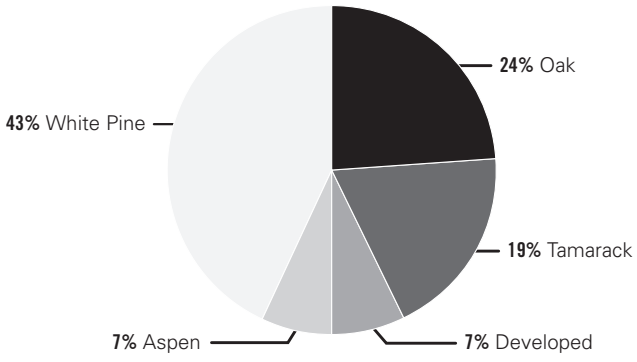


TABLE 2.14 KETCHUM CREEK HEADWATERS CURRENT AND PREDICTED LAND COVER

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
Forested Types				
White Pine	251	43%	279	48%
Oak	136	24%	151	26%
Tamarack	108	19%	108	19%
Aspen	43	7%	0	0%
Non-forested Types				
Developed	43	7%	43	7%
Total	**581**	**100%**	**581**	**100%**

AREA 11: PARADISE VALLEY PINES

This 669 acre native community management area is located primarily north of the state forest boundary between Woodland Road and Millston Road. This is a complex system significant primarily for its terrestrial features, and diversity in terms of hydrology, animals, and vegetation. The site contains significant, older stands of the geographically restricted white-pine red maple swamp natural community, as well as smaller areas of northern dry-mesic forest and northern sedge meadow. Several small headwater streams also originate in this area that flow into nearby Lee Lake. According to the Biotic Inventory, this area is known to contain two state threatened animals, two animal Species of Special Concern, four plant Species of Special Concern, and several Species of Greatest Conservation Need. The diversity of northern bird species is also significant here and includes Canada, Pine, Black-throated Green, and Blackburnian Warblers, Hermit Thrush and Red-breasted Nuthatch. The area is significant for its aesthetic attributes.

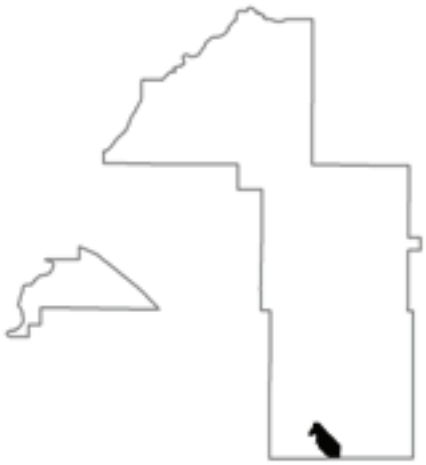
Description of the Forest Resource
The most common timber type is white pine with a small area of aspen and some tamarack.

Long-Term Management Objectives (100 years)
Provide a large area of structurally and functionally diverse, older, intact, connected forest comprised of old growth mixed hardwood and conifer species. Preserve coarse woody debris and standing dead snags for old growth habitat and structural diversity. Protect, manage, and enhance natural communities for ecological values and rare species habitat needs.

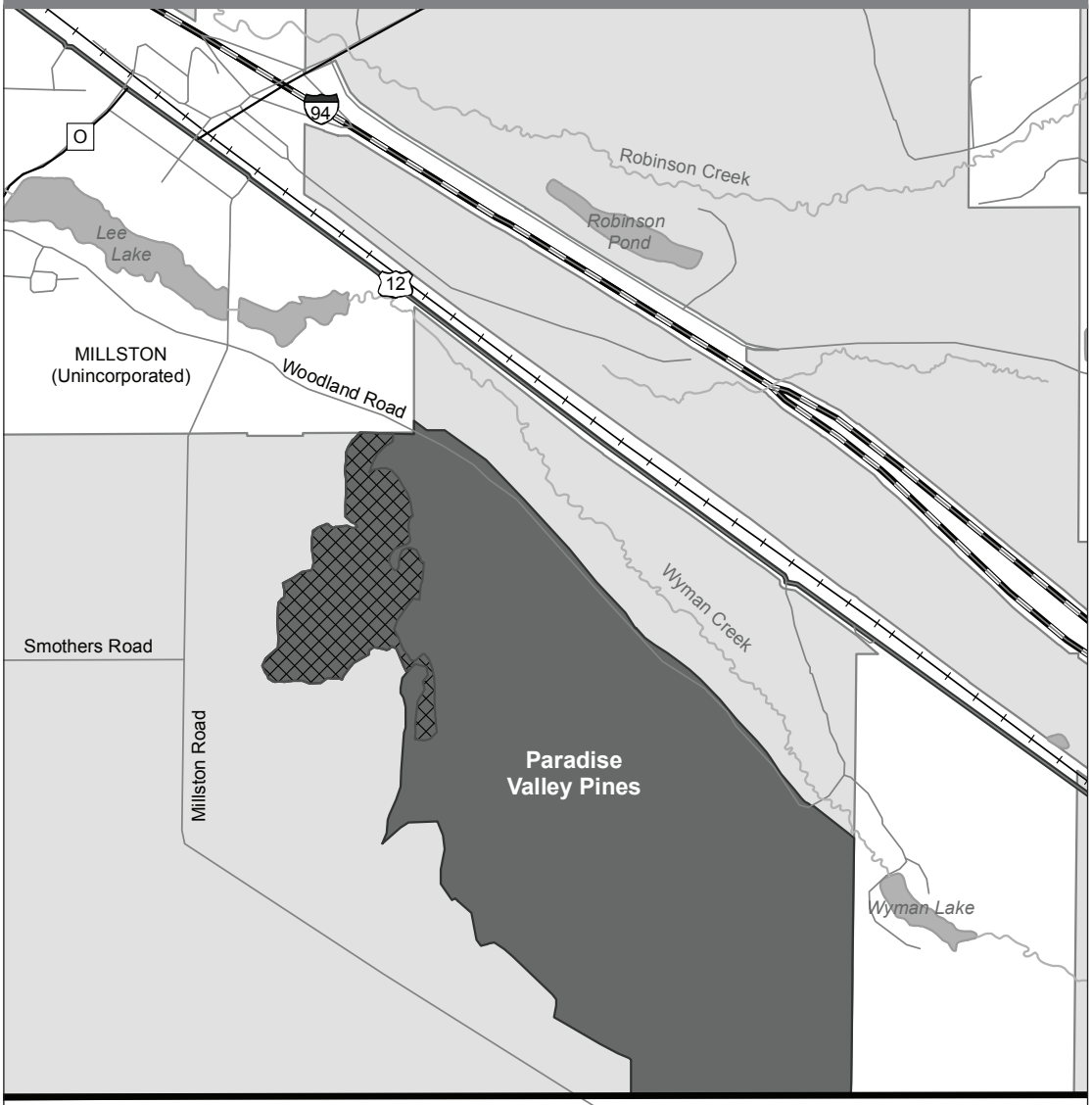
AREA 11 SUMMARY

- Maintain and develop older, closed canopy forests, including some areas for potential old growth.
- Manage and maintain a large area of un-fragmented conifer forest.
- Protect, manage, and enhance habitat for key species identified in the Biotic Inventory.
- Protect and enhance water resources along with scenic and aesthetic values.

AREA 11 LOCATOR MAP



MAP 2.16 PARADISE VALLEY PINES



Short-Term Management Objectives (50 years)

- Develop and maintain an older, closed canopy forest of white pine.
- Enhance forest structural diversity and development of old growth characteristics such as large diameter trees, standing dead snags, and coarse woody debris.
- Protect water quality through protection and maintenance of wetland habitats and seeps consistent with Best Management Practices (BMPs) for water quality.
- Protect multiple scenic and aesthetic qualities of the site.

Area Specific Resource Management Prescriptions
Active Management (595 acres)

- Decrease short-lived species, such as aspen, and increase longer-lived species, such as white pine, primarily through thinning and natural conversion.
- Promote the growth and retention of large white pine through techniques such as thinning, extended rotation, and managed old growth. Follow the DNR Old Growth and Old Forest Handbook management guidelines, particularly related to Managed Old Growth forests. Monitor composition and structural changes to aid future management decisions.
- Thin specific stands in a way that maintains closed canopy conditions within a majority of the actively managed area.
- Retain snags and coarse woody debris to promote old growth characteristics whenever their retention does not conflict with other forest management activities or present hazards.
- Follow the DNR Silviculture and Forest Aesthetics Handbook to manage the scenic and aesthetic qualities of the site.

Area Specific Resource Management Prescriptions
Passive Management (74 acres)

- Control of invasive species, non-commercial forest practices, and prescribed fire may occur.

FIGURE 2.12 PARADISE VALLEY PINES CURRENT LAND COVER

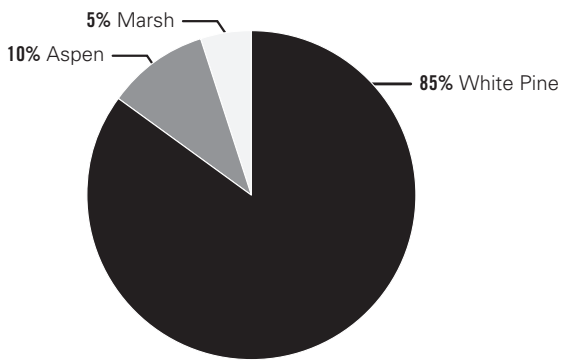


TABLE 2.15 PARADISE VALLEY PINES CURRENT AND PREDICTED LAND COVER

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
Forested Types				
White Pine	567	85%	597	90%
Aspen	65	10%	35	5%
Non-forested Types				
Marsh	37	5%	37	5%
Total	**669**	**100%**	**669**	**100%**

AREA 12: PEATLANDS

The Peatlands Native Community Management Area consists of five sites totaling 1,203 acres scattered throughout the forest (Map 2.17). They include Ring Marsh (71 acres), Spider Peatlands (106 acres), Komensky Peatlands (190 acres), Starlight/Ketchum Marsh (234 acres), and Washburn Marsh (606 acres). These sites represent examples of several wetland types that have relatively unaltered hydrology, are considered intact, and range in size from small to large. According to the Biotic Inventory, natural communities represented include central poor fen, open bog, tamarack (poor) bog, and northern sedge meadow. Combined, these sites contain numerous rare species, including vertebrate and invertebrate animals that are either threatened or endangered at the state level, and many Species of Greatest Conservation Need and Species of Special Concern. Several rare bird species, including some that are sensitive to habitat size, also use these wetlands for nesting.

Description of the Forest Resource

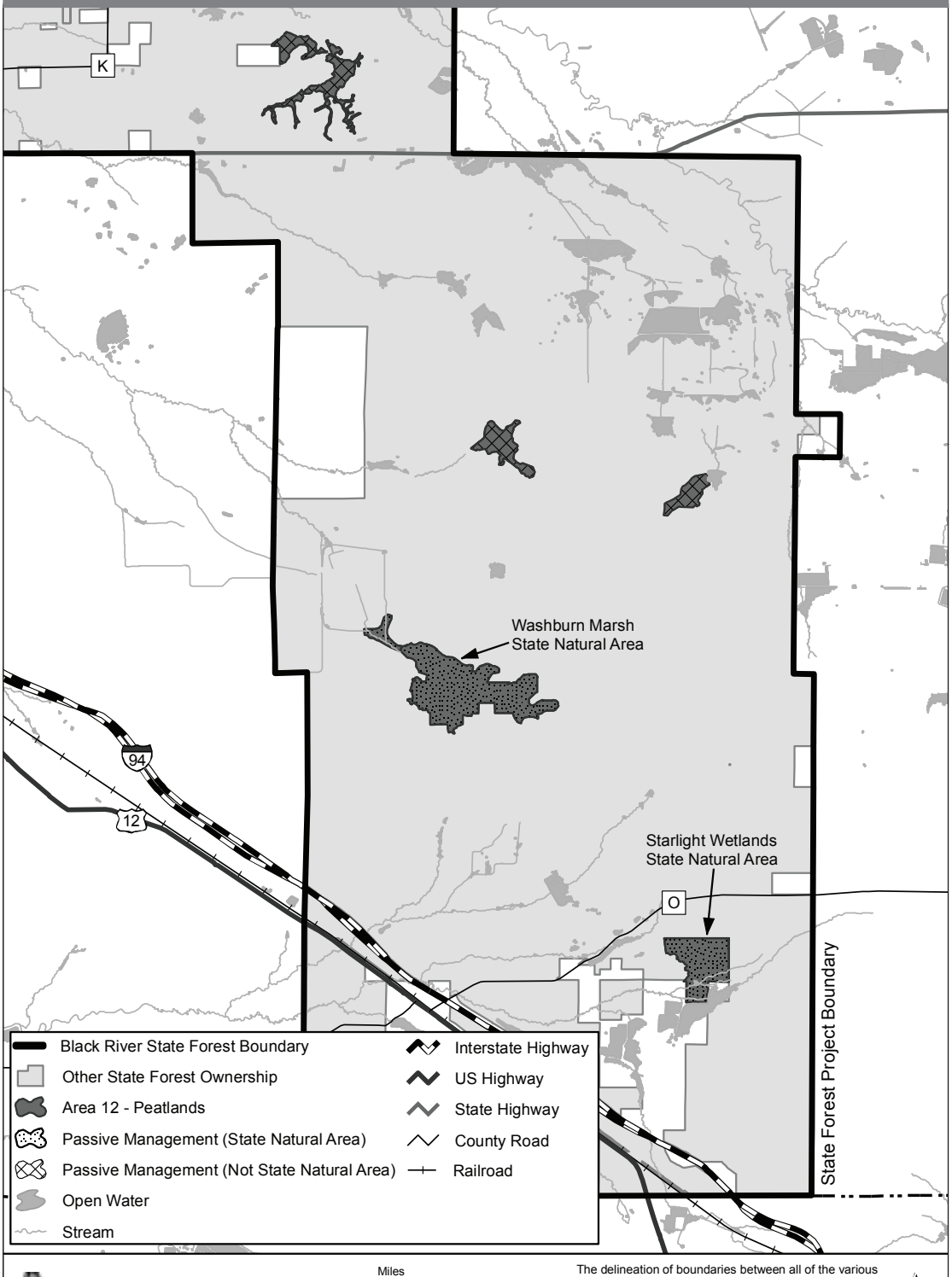
Trees are generally lacking in these open wetland areas. However, some trees exist in the margins of the delineated areas or as scattered "islands."The most common timber type is tamarack and, to a lesser extent, white and jack pine, oak, aspen, and red maple.

AREA 12 SUMMARY

- Protect and maintain site hydrology.
- Protect, manage, and enhance peatlands and associated natural communities.
- Maintain current open landscape conditions.
- Protect multiple scenic and aesthetic qualities of the site.
- Prohibit commercial mossing operations.
- Continue designation of the 298 acre Washburn Marsh State Natural Area. An additional 267 acres will be added to the existing SNA for a total of 565 acres.
- Designate a 233 acre portion of the Starlight Wetlands SNA which exists within both this management area and the Starlight Wetlands Native Community Management Area.

AREA 12 LOCATOR MAP

MAP 2.17 PEATLANDS



Long-Term Management Objectives (100 years)
Maintain lands that are structurally and functionally diverse, and that collectively feature a spectrum of wetland types and sizes and relatively unaltered hydrology. Protect, manage, and enhance natural communities for ecological values and rare species habitat needs.

Short-Term Management Objectives (50 years)
- Protect hydrology of sites.
- Protect hydrology of connected wetland basins, headwater streams, seeps, and other associated hydrologic features.
- Protect water quality through protection and maintenance of wetland habitat and seeps consistent with Best Management Practices (BMPs) for water quality.
- Maintain current open landscape condition of the sites.
- Protect multiple scenic and aesthetic qualities of the site.

Area Specific Resource Management Prescriptions
Active Management
There are no acres in this designation.

Area Specific Resource Management Prescriptions
Passive Management (1,203 acres)
- Non-commercial harvest, prescribed fire, and control of invasive species may occur.
- Prohibit moss harvesting to protect peatland habitat and maintain site hydrology.
- Follow the DNR Silviculture and Forest Aesthetics Handbook to manage the scenic and aesthetic qualities of the site.
- Designate the 565 acre Washburn Marsh State Natural Area (298 acres of existing SNA, plus 267 acres of new SNA).
- Designate a 233 acre portion of the 1,065 acre Starlight Wetlands State Natural Area. This SNA also extends into the Starlight Wetlands Native Community Management Area.

FIGURE 2.13 PEATLANDS CURRENT LAND COVER

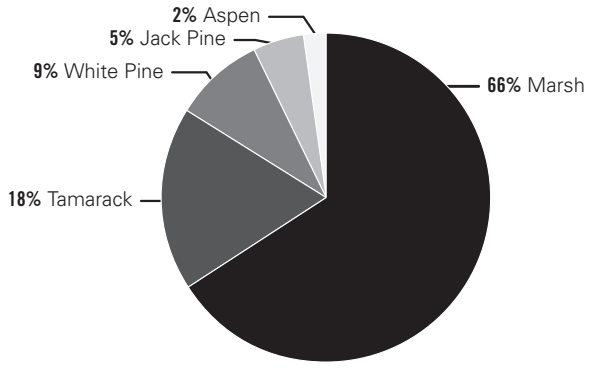


TABLE 2.16 PEATLANDS CURRENT AND PREDICTED LAND COVER

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
Forested Types				
Tamarack	218	18%	217	18%
White Pine	109	9%	108	9%
Jack Pine	61	5%	24	2%
Red Pine	0	0%	36	3%
Aspen	20	2%	0	0%
Oak	6	0%	0	0%
Red Maple	5	0%	12	1%
Non-forested Types				
Marsh	778	66%	806	67%
Brush	6	0%	0	0%
Total	**1,203**	**100%**	**1,203**	**100%**

PEATLANDS

AREA 13: CATFISH EDDY TERRACES

This 745 acre native community management area is primarily located between the Black River to the west and Hawk Island Road, Perry Creek Road, and River Drive to the east. The area includes three separate areas, one of which is separated by private land, and the other by old agricultural fields (Manchester Bottoms). The centrally located parcel contains lands on each side of Perry Creek. This is a complex system significant for both its aquatic and terrestrial features, and diverse in terms of hydrology, topography, soils, animals, and vegetation. The lower reach of Perry creek flows through a steep-walled gorge of Cambrian sandstone that is geologically unique. The more extensive natural communities of the site are floodplain forest, southern mesic forest, and northern dry-mesic forest. The site also includes a high density and diversity of microsites including moist cliff, seepages, springs, and spring runs. According to the Biotic Inventory, this area is known to contain a number of rare species including three state threatened animals, one state endangered plant, one state threatened plant, and numerous Species of Greatest Conservation Need and Species of Special Concern. The area is significant for its scenic attributes and adjacent recreational amenities.

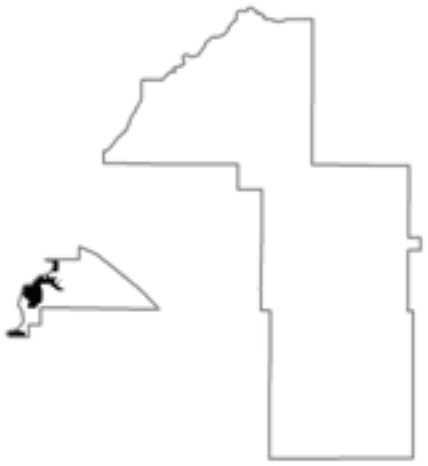
Description of the Forest Resource

Steep slopes, cliffs, and spring seeps, have made portion of this area inaccessible to timber harvesting. The most common timber type in upland areas is white pine with some oak, jack pine and red pine plantations. Lowland areas include a mixture of silver maple, red maple, sugar maple, river birch, yellow birch, black ash, hackberry, bitternut hickory, butternut, American elm, red elm, white pine, and some basswood.

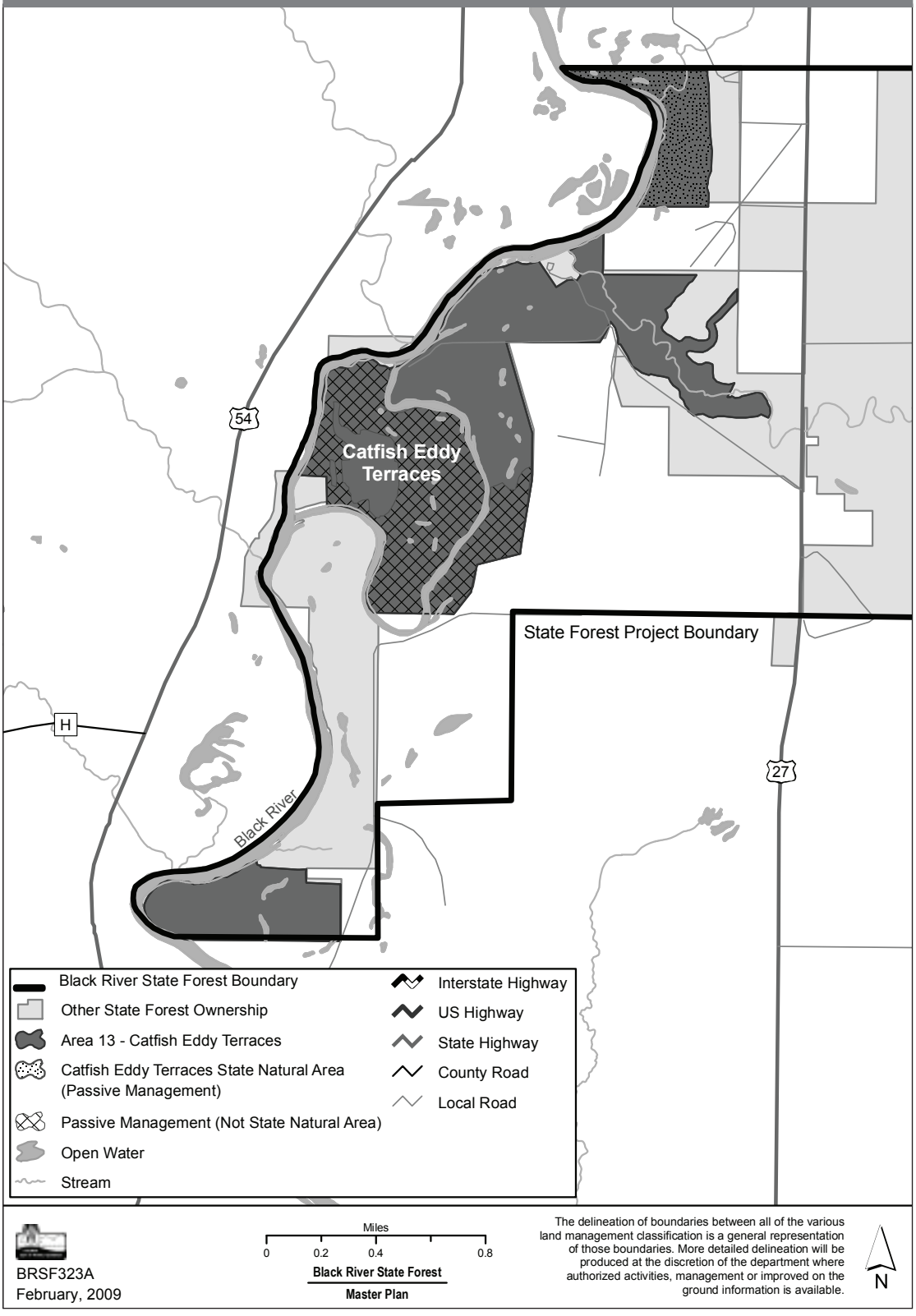
AREA 13 SUMMARY

- Maintain and develop an older closed canopy forest, including some areas for potential old growth.
- Manage and maintain an area of un-fragmented upland and bottomland/mixed forest.
- Manage red pine plantations to create a natural appearance.
- Protect, manage, and enhance habitat for key species identified in the biotic inventory.
- Protect and enhance water resources along with scenic and aesthetic values.
- Designate a 75 acre State Natural Area.

AREA 13 LOCATOR MAP



MAP 2.18 CATFISH EDDY TERRACES



Long-Term Management Objectives (100 years)
Provide a large area of structurally and functionally diverse, older, intact, connected forest comprised of large diameter maple, white pine, and mixed hardwood species. Preserve coarse woody debris and standing dead snags for old growth habitat and structural diversity. Protect, manage, and enhance natural communities for ecological values and rare species habitat needs.

Short-Term Management Objectives (50 years)
- Develop and maintain an older, closed canopy forest of longer-lived species, such as white pine in the uplands and bottomland hardwoods in the lowlands.
- Enhance forest structural diversity and development of old growth characteristics such as large diameter trees, standing dead snags, and coarse woody debris.
- Protect water quality through protection and maintenance of riparian habitat and seeps consistent with Best Management Practices (BMPs) for water quality.
- Protect multiple scenic and aesthetic qualities of the Black River and Perry Creek.

Area Specific Resource Management Prescriptions
Active Management (445 acres)
- Promote the growth and retention of large white pine and other species through techniques such as thinning, extended rotation, and managed old growth. Follow the DNR Old Growth and Old Forest Handbook, particularly related to Managed Old Growth forests. Monitor composition and structure changes to aid future management decisions.
- Thin specific stands in a way that maintains closed canopy conditions within a majority of the actively managed area.
- Actively manage red pine plantations primarily through thinning and natural regeneration techniques to create stands with a natural appearance and large diameter trees.
- Retain snags and coarse woody debris to promote old growth characteristics whenever their retention does not present hazards or conflict with other forest management activities.
- For the riparian lands along the Black River and Perry Creek, follow the DNR Silviculture and Forest Aesthetics Handbook guidelines for Class A Scenic Management Zones.

Area Specific Resource Management Prescriptions
Passive Management (300 acres)
- Control of invasive species, non-commercial forest practices, and prescribed fire may occur.
- Designate the 75 acre Catfish Eddy Terraces State Natural Area.

FIGURE 2.14 CATFISH EDDY TERRACES CURRENT LAND COVER

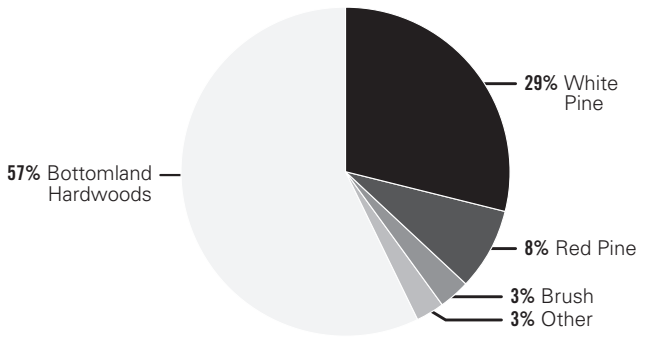


TABLE 2.17 CATFISH EDDY TERRACES CURRENT AND PREDICTED LAND COVER

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
Forested Types				
Bottomland Hardwoods	422	57%	422	57%
White Pine	215	29%	215	29%
Red Pine	62	8%	62	8%
Non-forested Types				
Brush	26	3%	26	3%
Other	20	3%	20	3%
Total	**745**	**100%**	**745**	**100%**

AREA 14: ROBINSON/MILLSTON PINES

This 626 acre native community management area is located primarily south of Robinson Creek, west of the Town of Millston, and between Habelman Road, Smothers Road, Millston Road, and Woodland Road. This is a complex system significant for its aquatic and terrestrial features, and diverse in terms of hydrology, animals, and vegetation. The site contains significant, older stands of the geographically restricted white-pine/red maple swamp natural community. The site also contains headwater streams that occur as small patches within a forested matrix of pine and are an important source of water for Robinson Creek to the north. Robinson Creek is also noteworthy in that it is one of the few streams in the area that is a clear, soft, cool to cold water stream that supports rare aquatic animals and trout. According to the Biotic Inventory, this area is known to contain two state threatened animals, six animal Species of Special Concern, three plant Species of Special Concern, and several Species of Greatest Conservation Need. The diversity of northern bird species is also significant here and includes Canada, Pine, Black-throated Green, and Black-burnian Warblers, and Winter Wren. The area is significant for its aesthetic attributes.

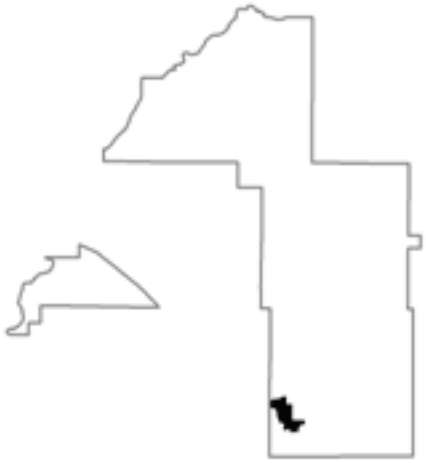
Description of the Forest Resource

The most common timber type is white pine. The site also contains a component of swamp hardwoods, tamarack, and jack pine.

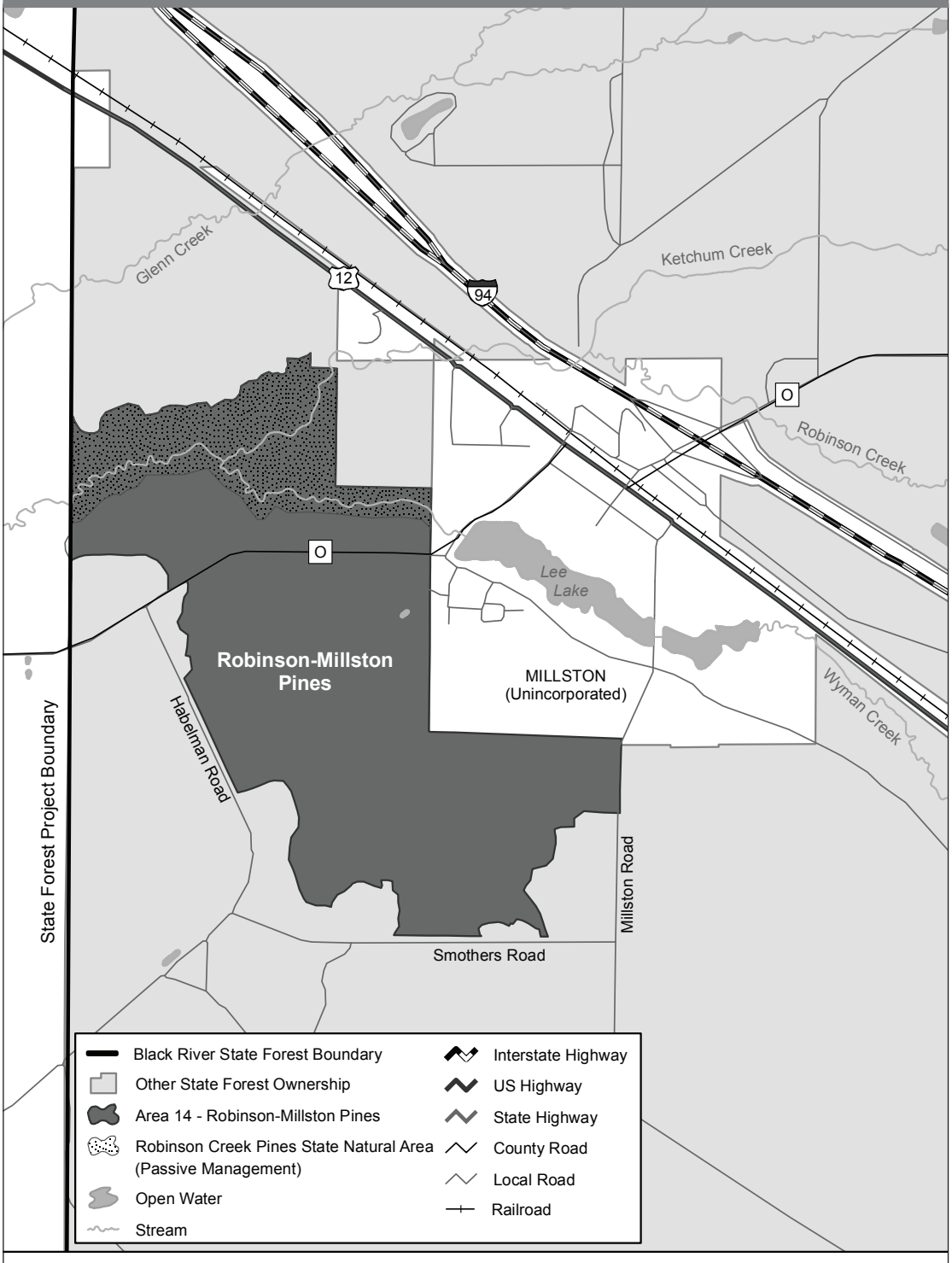
AREA 14 SUMMARY

- Maintain and develop older, closed canopy forests, including some areas for potential old growth.
- Manage and maintain a large area of un-fragmented conifer forest.
- Protect, manage, and enhance habitat for key species identified in the Biotic Inventory.
- Protect and enhance water resources along with scenic and aesthetic values.
- Designate a 126 acre State Natural Area (85 acres of existing SNA, 41 acres of new SNA).

AREA 14 LOCATOR MAP



MAP 2.19 ROBINSON/MILLSTON PINES



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The delineation of boundaries between all of the various land management classification is a general representation of those boundaries. More detailed delineation will be produced at the discretion of the department where authorized activities, management or improved on the ground information is available.

Long-Term Management Objectives (100 years)
Provide a large area of structurally and functionally diverse, older, intact, connected forest comprised of old growth pine, mixed hardwood, and mixed conifer species. Preserve coarse woody debris and standing dead snags for old growth habitat and structural diversity. Protect, manage, and enhance natural communities for ecological values and rare species habitat needs.

Short-Term Management Objectives (50 years)
- Develop and maintain an older, closed canopy forest of white pine.
- Enhance forest structural diversity and development of old growth characteristics such as large diameter trees, standing dead snags, and coarse woody debris.
- Protect water quality through protection and maintenance of riparian and wetland habitats and seeps consistent with Best Management Practices (BMPs) for water quality.
- Protect the scenic and aesthetic qualities of the site, including riparian areas.

Area Specific Resource Management Prescriptions
Active Management (500 acres)
- Decrease short-lived species, such as aspen, and increase longer-lived species, such as white pine, primarily through thinning and natural conversion.
- Promote the growth and retention of large white pine through techniques such as thinning, extended rotation, and managed old growth. Follow the DNR Old Growth and Old Forest Handbook, particularly related to Managed Old Growth forests. Monitor composition and structure changes to aid future management decisions.
- Thin specific stands in a way that maintains closed canopy conditions within one third of the actively managed area.
- Retain snags and coarse woody debris to promote old growth characteristics whenever their retention does not conflict with other forest management activities or present hazards.

Area Specific Resource Management Prescriptions
Passive Management (126 acres)
- Control of invasive species, non-commercial forest practices, and prescribed fire may occur.
- Follow the DNR Silviculture and Forest Aesthetics Handbook to manage the scenic and aesthetic qualities of the site, including the guidelines for Class A Scenic Management Zones along stream shorelines.
- Designate the 126 acre Robinson Creek Pines State Natural Area (85 acres of existing SNA, 41 acres of new SNA).

FIGURE 2.15 ROBINSON/MILLSTON PINES CURRENT LAND COVER

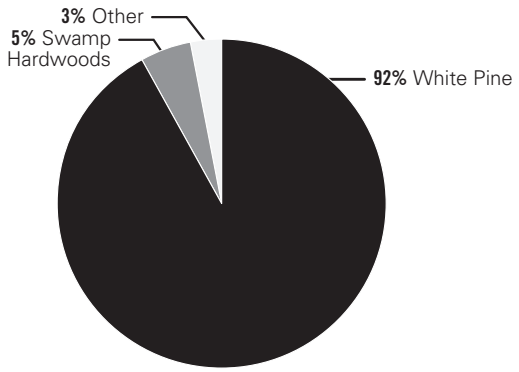


TABLE 2.18 ROBINSON/MILLSTON PINES CURRENT AND PREDICTED LAND COVER

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
Forested Types				
White Pine	577	92%	577	92%
Swamp Hardwoods	30	5%	30	5%
Non-forested Types				
Other	19	3%	19	3%
Total	**626**	**100%**	**626**	**100%**

AREA 15: SETTLEMENT ROAD PINE SWAMP

This 156 acre native community management area is located immediately northeast and southeast of the intersection of Shale Road and North Settlement Road. The significance of this site, according to the Biotic Inventory, is that it contains an old forest of white pine-red maple swamp natural community in the lowlands and old white and red pine, as well as oak in the uplands. Currently, the site contains the only mature forest in the vicinity and supports one state threatened bird and two plant Species of Special Concern that do not find suitable habitat in nearby cutover areas. The site also harbors a small headwater stream.

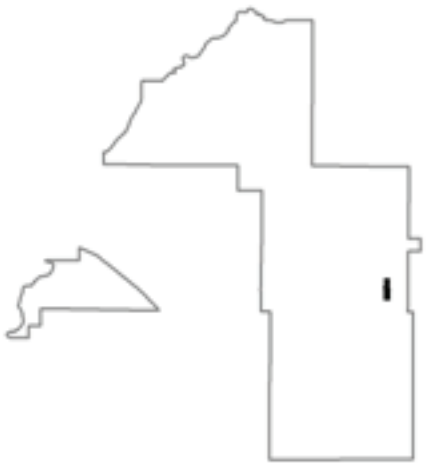
Description of the Forest Resource
The most common timber types are white pine and oak.

Long-Term Management Objectives (100 years)
Provide a small representative example of a structurally and functionally diverse, older forest in both upland and lowland areas that is comprised of old growth pine, oak, and mixed hardwood species. Preserve coarse woody debris and standing dead snags for old growth habitat and structural diversity. Protect, manage, and enhance natural community for ecological values and rare species habitat needs.

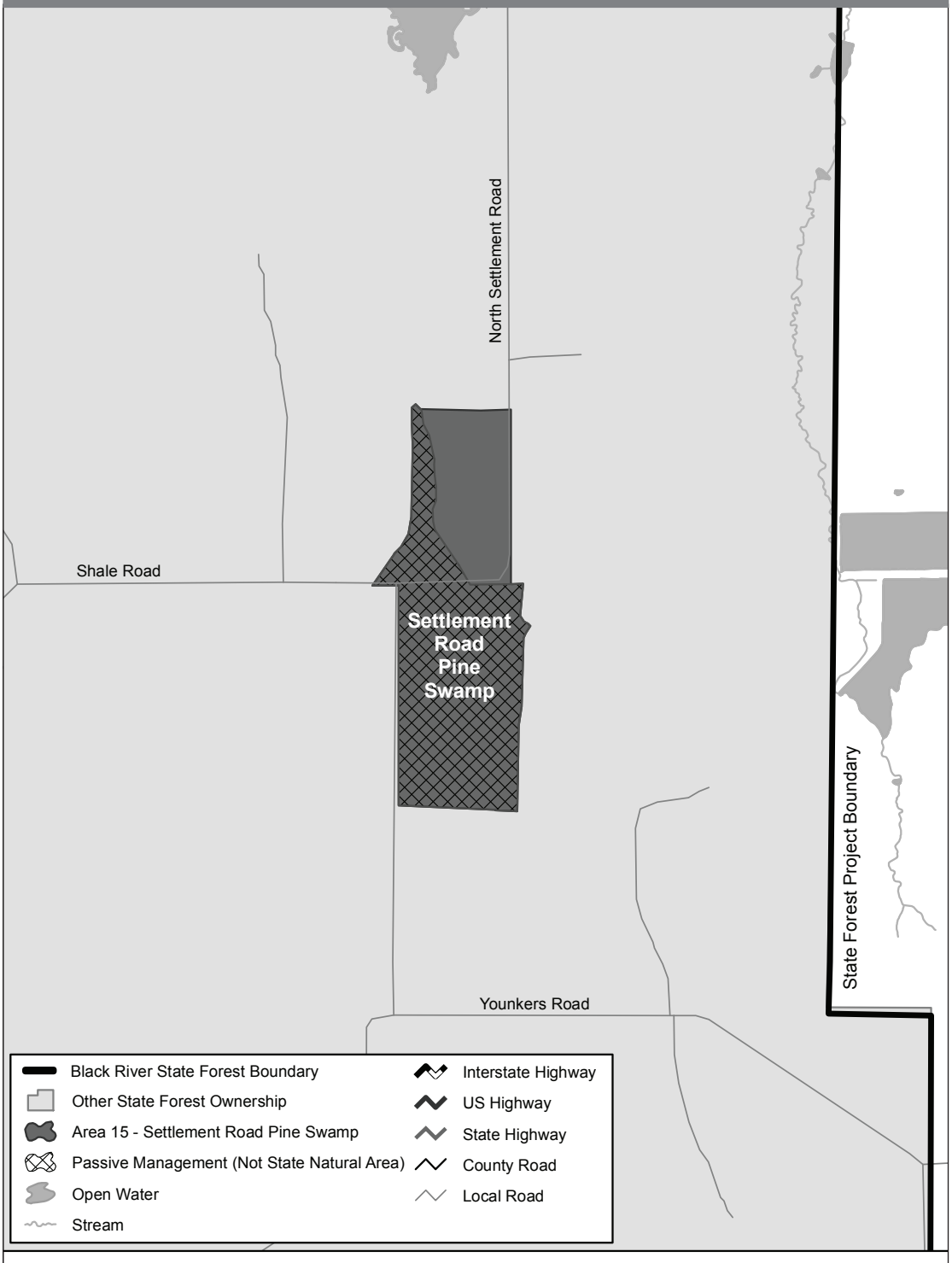
AREA 15 SUMMARY

- Maintain and develop older closed canopy forests, including potential old growth.
- Protect, manage, and enhance habitat for key species identified in the Biotic Inventory.
- Protect and enhance scenic and aesthetic values.

AREA 15 LOCATOR MAP



MAP 2.20 SETTLEMENT ROAD PINE SWAMP



Short-Term Management Objectives (50 years)

- Develop and maintain an older, closed canopy forest of longer-lived species such as white and red pine, and white oak.
- Enhance forest structural diversity and development of old growth characteristics such as large diameter trees, standing dead snags, and coarse woody debris.
- Protect multiple scenic and aesthetic qualities, as well as the water resources of the site.

Area Specific Resource Management Prescriptions
Active Management (43 acres)

- Decrease short-lived species, such as aspen, and maintain longer-lived species, such as oak (especially white oak), primarily through thinning.
- Promote the growth and retention of large oak (especially white oak) and pines through techniques such as thinning, extended rotation, and managed old growth. Follow the DNR Old Growth and Old Forest Handbook, particularly related to Managed Old Growth forests. Monitor composition and structure changes to aid future management decisions.
- Retain snags and coarse woody debris to promote old growth characteristics whenever their retention does not present hazards or conflict with other forest management activities.
- Follow the DNR Silviculture and Forest Aesthetics Handbook to manage the scenic and aesthetic qualities of the site.

Area Specific Resource Management Prescriptions
Passive Management (113 acres)

- Control of invasive species, non-commercial forest practices, and prescribed fire may occur.

FIGURE 2.16 SETTLEMENT ROAD PINE SWAMP CURRENT LAND COVER

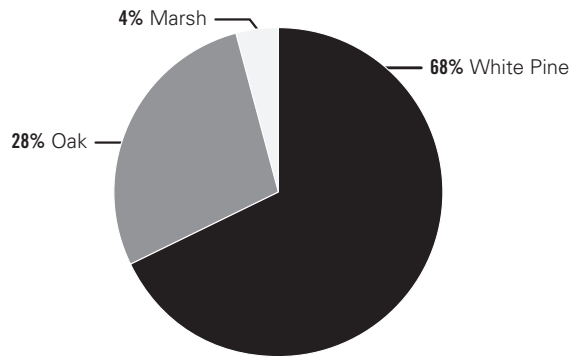
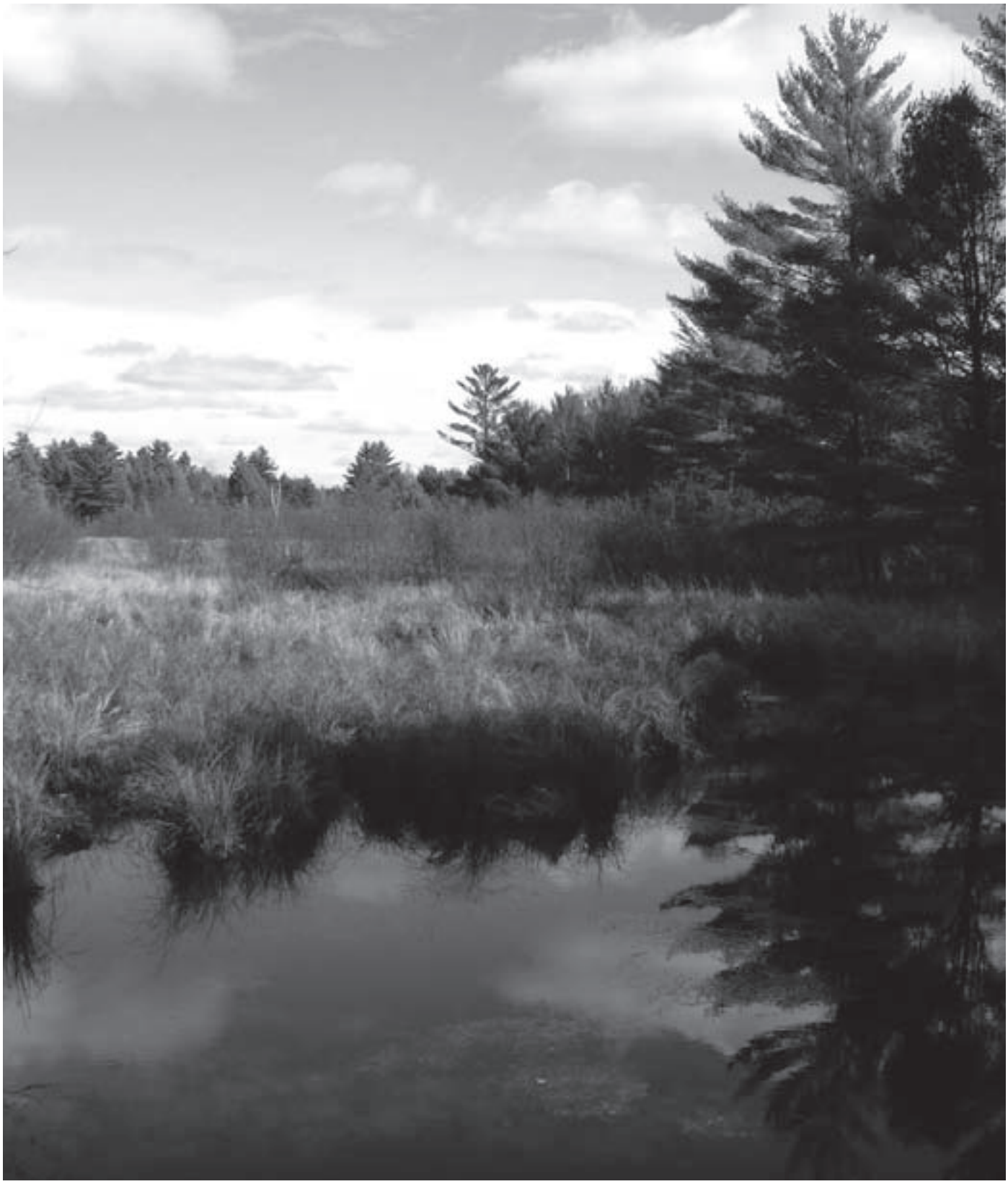


TABLE 2.19 SETTLEMENT ROAD PINE SWAMP CURRENT AND PREDICTED LAND COVER

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
Forested Types				
White Pine	107	68%	107	68%
Non-forested Types				
Oak	43	28%	43	28%
Marsh	6	4%	6	4%
Total	**156**	**100%**	**156**	**100%**



AREA 16: STANTON PINES

This 971 acre native community management area is located primarily between I-94, Hunter Haven Road, and Stanton Creek Road. This is a complex system that is diverse in terms of hydrology, animals, and vegetation. According to the Biotic Inventory, this site contains several older stands of the geographically restricted white pine-red maple swamp natural community, as well as smaller areas of northern dry-mesic forest and tamarack (poor) swamp. One small headwater stream that flows into nearby Glen Creek also originates in this area. The area is known to contain one state threatened animal, one animal Species of Special Concern, three plant Species of Special Concern, and several Species of Greatest Conservation Need. Portions of this area are significant for aesthetic attributes.

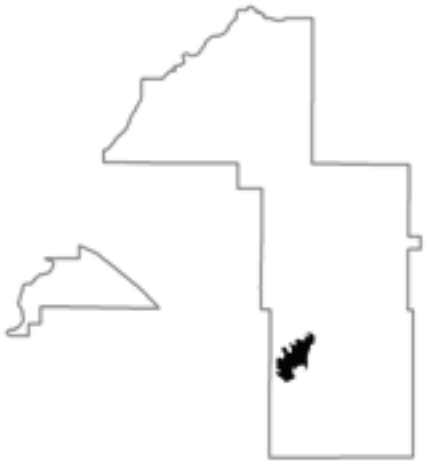
Description of the Forest Resource
The most common timber type is white pine with a small area of tamarack. The area contains several older isolated stands of white pine surrounded by a younger forest of the same type.

Long-Term Management Objectives (100 years)
Maintain and enhance a large, old white pine forest that is nearing biological rotation and features some characteristics of old growth, including increased structural diversity and course woody debris. Harvest selected stands that have reached biological rotation. Protect, manage, and enhance natural communities for ecological values and rare species habitat needs.

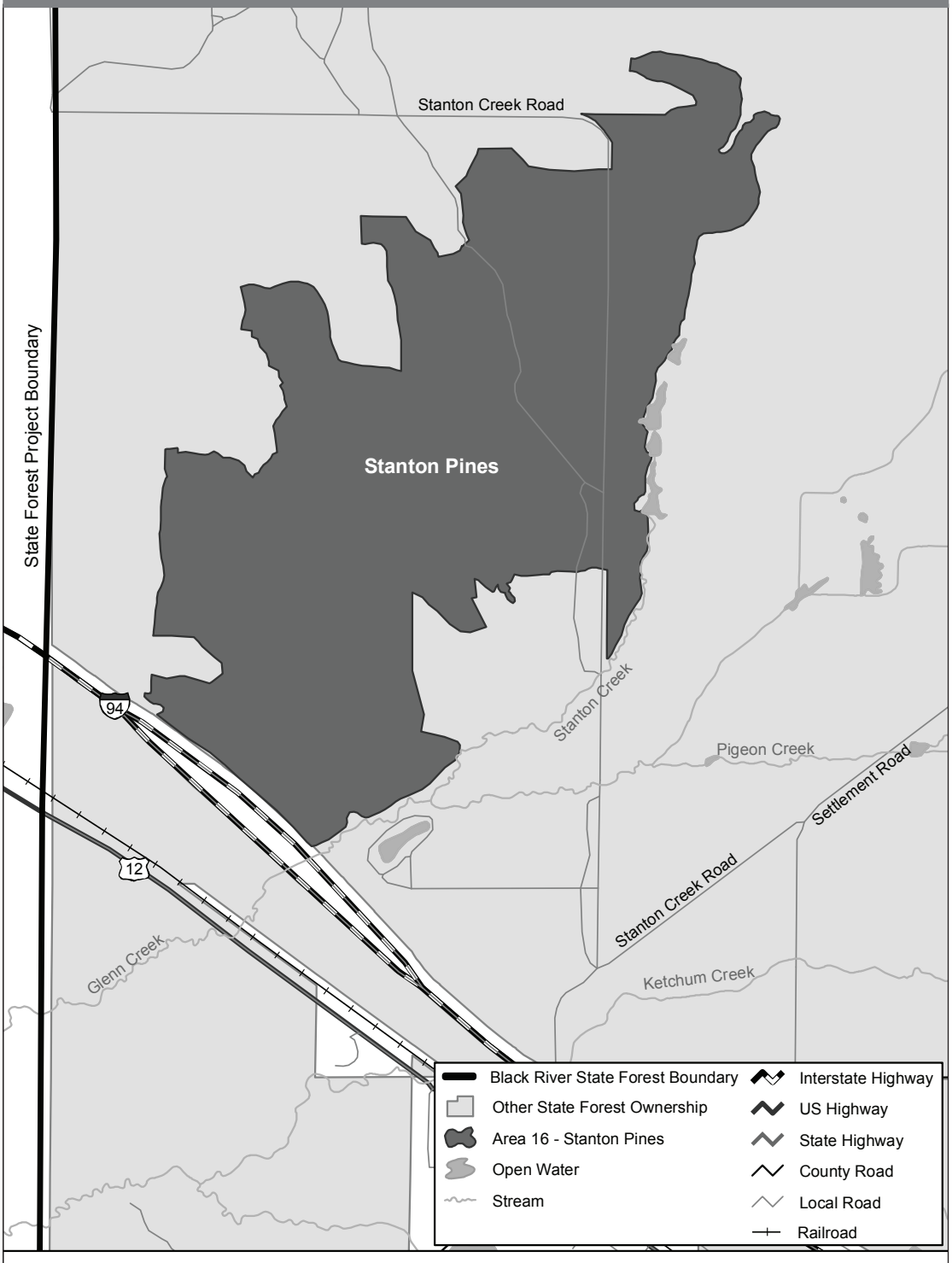
AREA 16 SUMMARY

- Develop and maintain an older white pine forest, including some areas for potential old growth.
- Protect, manage, and enhance habitat for key species identified in the Biotic Inventory.
- Enhance water quality, and protect wetlands and seeps.
- Protect multiple scenic and aesthetic resources.

AREA 16 LOCATOR MAP



MAP 2.21 STANTON PINES



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Short-Term Management Objectives (50 years)

- Develop and maintain an older forest of white pine, including some areas with closed canopy conditions.
- Improve forest structural diversity with large diameter trees, standing dead snags, and coarse woody debris.
- Protect water quality through protection and maintenance of wetland habitats and seeps consistent with Best Management Practices (BMPs) for water quality.
- Protect multiple scenic and aesthetic qualities of the site, including riparian areas along stream shorelines.

Area Specific Resource Management Prescriptions
Active Management (971 acres)

- Increase white pine primarily through thinning and natural conversion.
- Manage stands using biological rotation for white pine as described in the DNR Silviculture and Forest Aesthetics Handbook. Monitor composition and structure changes to aid future management decisions.
- Promote the growth and retention of large white pine through techniques such as thinning and extended rotation.
- Retain snags and coarse woody debris to promote old growth characteristics whenever their retention does not conflict with other forest management activities or present hazards.
- Follow the DNR Silviculture and Forest Aesthetics Handbook to manage the scenic and aesthetic qualities of the site, including guidelines for Class A Scenic Management Zones along stream shorelines.

Area Specific Resource Management Prescriptions
Passive Management

There are no acres in this designation.

FIGURE 2.17 STANTON PINES CURRENT LAND COVER

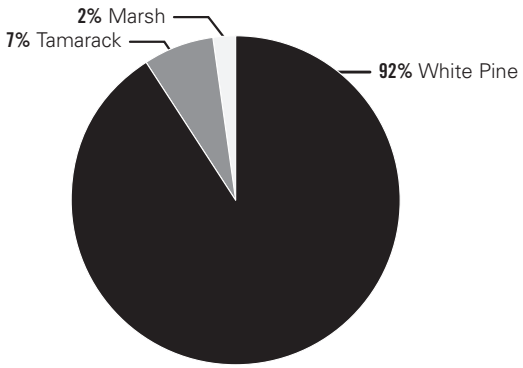


TABLE 2.20 STANTON PINES CURRENT AND PREDICTED LAND COVER

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
Forested Types				
White Pine	890	92%	890	92%
Tamarack	66	7%	66	7%
Non-forested Types				
Marsh	15	2%	15	2%
Total	**971**	**100%**	**971**	**100%**

AREA 17: STARLIGHT WETLANDS

This 1,650 acre native community management area is located south of County Trunk O, west of Starlight Road, and east of an artificially impounded cranberry farm. The Biotic Inventory describes this site as a highly complex system significant for both its aquatic and terrestrial features, and diverse in terms of hydrology, soils, animals and vegetation. The site is large and contains a diverse mosaic of natural communities that are relatively intact, including white pine-red maple swamp, black spruce swamp, northern dry-mesic forest, southern dry-mesic forest, northern sedge meadow, and central poor fen. The area is known to contain one state endangered animal, one state threatened animal, four animal Species of Special Concern, eight plant Species of Special Concern, and numerous Species of Greatest Conservation Need. The diversity of northern bird species is also significant here and includes Canada, Pine, Black-throated Green, and Blackburnian Warblers, and Winter Wren. The Yellow-rumped Warbler and Yellow-bellied Flycatcher also occur locally in the spruce-tamarack stands. The area is significant for its aesthetic attributes.

Description of the Forest Resource

The most common timber types are white pine, oak, and black spruce, and to a lesser extent, jack pine, tamarack, red maple, and swamp hardwoods. The site also contains a component of yellow birch within the white pine stands, and several red pine plantations.

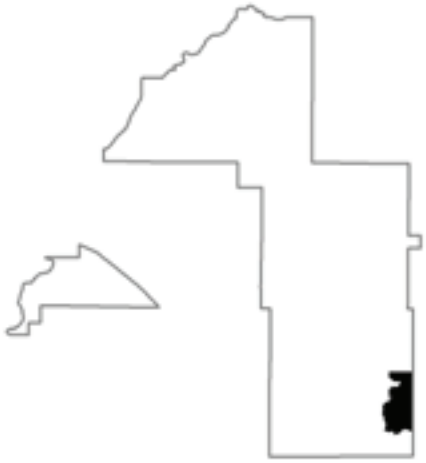
Long-Term Management Objectives (100 years)

Provide a relatively extensive area of structurally and functionally diverse, older, intact, connected forest comprised of old growth pine, mixed hardwood, and mixed conifer species. Preserve coarse woody debris and standing dead snags for old growth habitat and structural diversity. Protect, manage, and enhance natural communities for ecological values and rare species habitat needs.

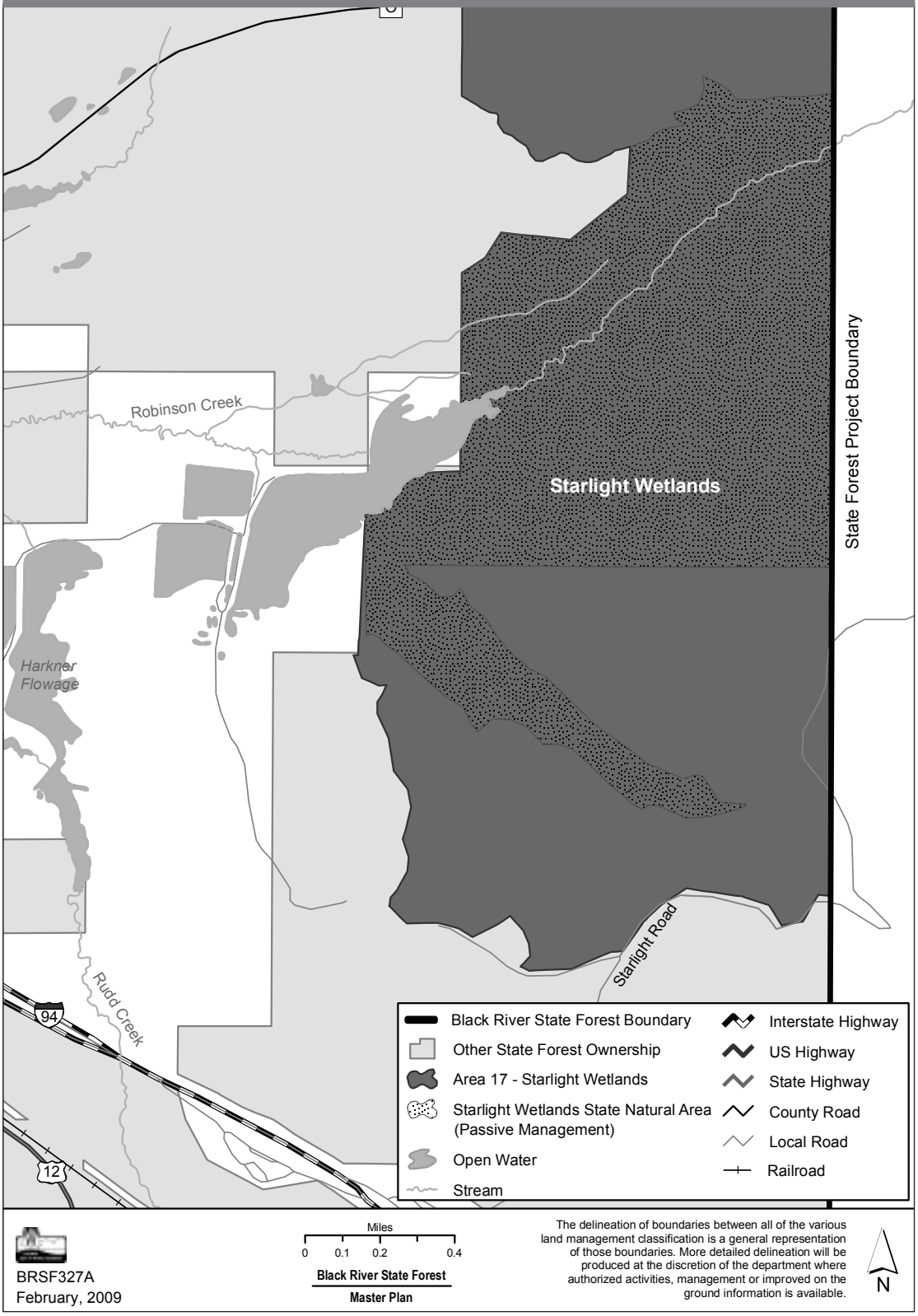
AREA 17 SUMMARY

- Maintain and develop a large, older, closed canopy forest, including some areas for potential old growth.
- Protect, manage, and enhance habitat for key species identified in the Biotic Inventory.
- Enhance water quality, and protect wetlands and seeps.
- Protect multiple scenic and aesthetic resources.
- Manage red pine plantations to create a natural appearance.
- Designate an 832 acre State Natural Area.

AREA 17 LOCATOR MAP



MAP 2.22 STARLIGHT WETLANDS



Short-Term Management Objectives (50 years)

- Develop and maintain an older, closed canopy forest of longer-lived species such as white pine and oak.
- Enhance forest structural diversity and development of old growth characteristics such as large diameter trees, standing dead snags, and coarse woody debris.
- Protect water quality through protection and maintenance of wetland habitat and seeps consistent with Best Management Practices (BMPs) for water quality.
- Protect multiple scenic and aesthetic qualities of the site, including riparian areas along stream shorelines.

Area Specific Resource Management Prescriptions
Active Management (818 acres)

- Decrease short-lived species, such as aspen, and increase longer-lived species, such as white pine and oak, primarily through thinning and natural conversion.
- Promote the growth and retention of large white pine and oak through techniques such as thinning, extended rotation, and managed old growth. Follow the DNR Old Growth and Old Forest Handbook, particularly related to Managed Old Growth forests. Monitor composition and structure changes to aid future management decisions.
- Thin specific stands in a way that maintains closed canopy conditions within a majority of the actively managed area.
- Actively manage red pine plantations primarily through thinning and natural regeneration techniques to create stands with a natural appearance and large diameter trees.
- Retain snags and coarse woody debris to promote old growth characteristics whenever their retention does not conflict with other forest management activities or present hazards.

Area Specific Resource Management Prescriptions
Passive Management (832 acres)

- Control of invasive species, non-commercial forest practices, and prescribed fire may occur.
- Follow the DNR Silviculture and Forest Aesthetics Handbook to manage the scenic and aesthetic qualities of the site, including guidelines for Class A Scenic Management Zones along stream shorelines.
- Designate an 832 acre portion of the 1,065 acre Starlight Wetlands State Natural Area. This SNA also extends into the Peatlands Native Community Management Area.

FIGURE 2.18 STARLIGHT WETLANDS CURRENT LAND COVER

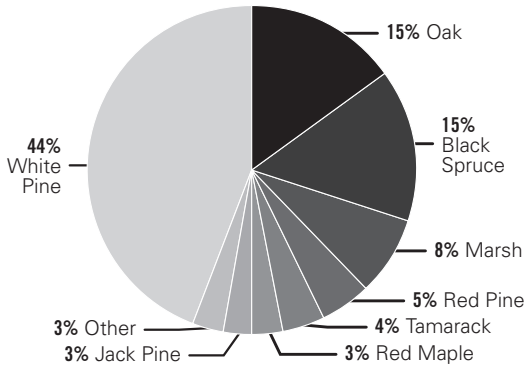


TABLE 2.21 STARLIGHT WETLANDS CURRENT AND PREDICTED LAND COVER

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
Forested Types				
White Pine	709	44%	792	48%
Oak	255	15%	132	8%
Black Spruce	245	15%	248	15%
Red Pine	88	5%	83	5%
Tamarack	68	4%	66	4%
Red Maple	49	3%	115	7%
Jack Pine	47	3%	33	2%
Non-forested Types				
Marsh	135	8%	132	8%
Other	54	3%	49	3%
Total	**1,650**	**100%**	**1,650**	**100%**

RECREATION MANAGEMENT AREAS

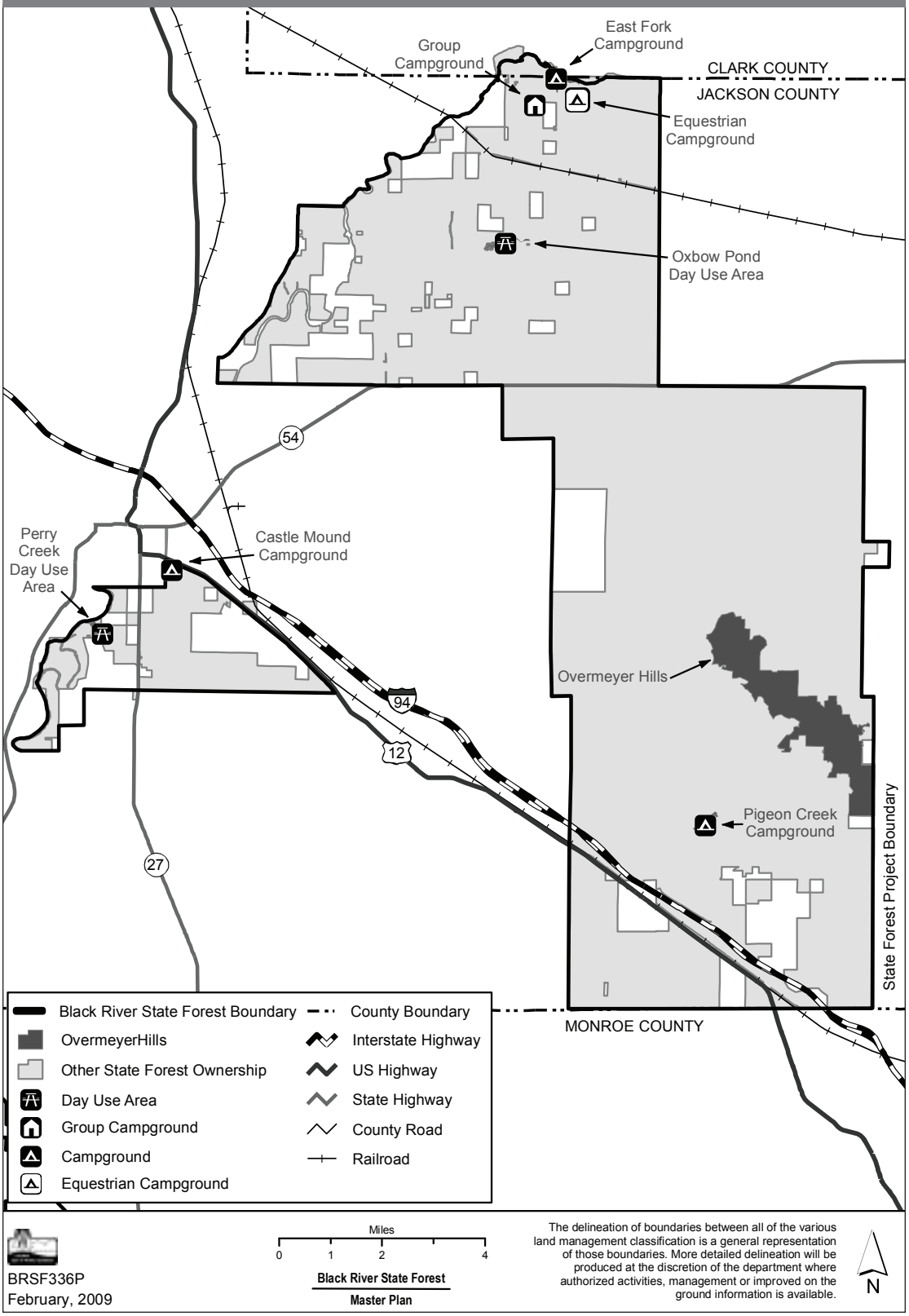
The purpose of a recreation management area is to provide and maintain land and water areas and facilities for outdoor public recreation or education. Each separate recreation area has different goals regarding future landscape conditions, management activities, policies for protection, maintenance, enhancement, or restoration of the visual characteristics important to the recreational use of the area.

TABLE 2.22 RECREATION MANAGEMENT AREAS

Area #	Recreation Management Areas	Acres
18	Overmeyer Hills	2,241
19	Campgrounds and Day Use	155
	Total	**2,396**

Please refer to the General Forest Management Prescriptions on page 98 for prescriptions by forest type. These prescriptions apply and all management activities are authorized, except as noted below for these management areas.

MAP 2.23 RECREATION MANAGEMENT AREAS



AREA 18: OVERMEYER HILLS

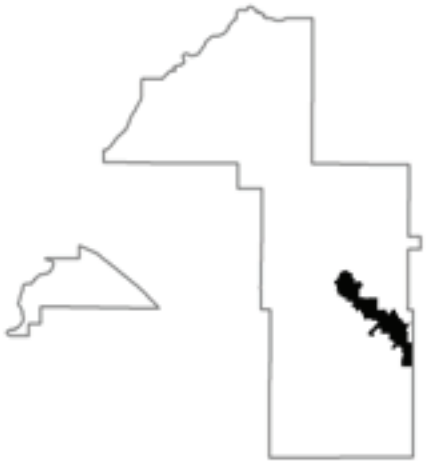
This 2,241 acre recreation management area can be accessed off of Shale Road, Smrekar Road, and North Settlement Road. The Overmeyer Hills are the most popular area of the Black River State Forest for silent sport enthusiasts. This area includes a 24 mile cross-country skiing, mountain biking, and hiking trail system that offers a variety of different activities and levels of difficulty. This area is the most popular location in the state forest for backpack camping and is considered one of the best cross-country ski destinations in the state. Much of the attraction of this area is its rugged and scenic character, with several spectacular scenic vistas located along the trail. The site is classified as a Type 3 Recreational Use Setting (NR 44.07).

In addition to providing scenic beauty and recreational opportunities, the site is also ecologically significant and diverse in topography, soils, animals, and vegetation. The forested ridge system of the Overmeyer Hills constitutes the most extensive area of intact upland forest in the state forest and provides an opportunity to maintain this attribute. The site is situated on a Cambrian sandstone ridge rising approximately 300 feet above the surrounding plain, running east to west and extending nearly five miles. Because of the varying topography and associated bedrock of this ridge, the site contains several forest types and associated natural communities. The dry southwest facing slopes contain the central sands pine-oak forest natural community, and the northeast facing slopes contain southern dry-mesic forest and northern dry-mesic forest communities. The area is known to contain many rare species including two state threatened vertebrate animals, one state endangered

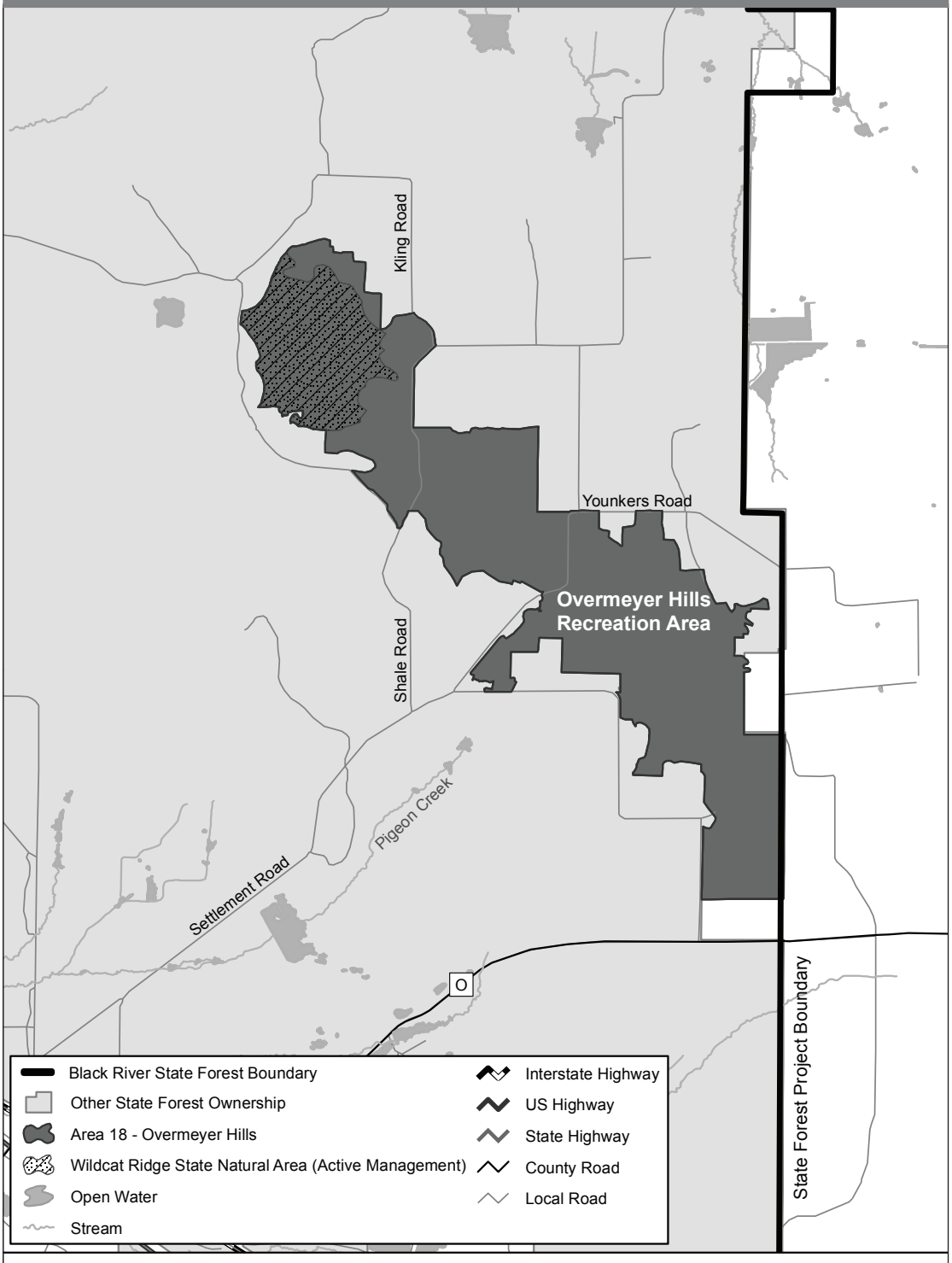
AREA 18 SUMMARY

- Protect and enhance scenic, aesthetic, and recreational values.
- Maintain and develop older, closed canopy, un-fragmented forest, including potential old forest on north and east slopes.
- Protect, manage, and enhance habitat for key species identified in the Biotic Inventory.
- Designate a 379 acre State Natural Area.

AREA 18 LOCATOR MAP



MAP 2.24 OVERMEYER HILLS



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February, 2009

The delineation of boundaries between all of the various land management classification is a general representation of those boundaries. More detailed delineation will be produced at the discretion of the department where authorized activities, management or improved on the ground information is available.

plant, and numerous Species of Greatest Conservation Need and Species of Special Concern. The area is known to contain many area sensitive forest interior birds.

Description of the Forest Resource

The most common timber type is oak and, to a lesser extent, jack pine, red pine, and white pine. Several red pine plantations also occur within the area. Logging has been somewhat limited here within the last 25 years because the site was designated the "Overmeyer Hills Wild Area"in the 1983 Master Plan. This designation was primarily meant to protect the aesthetic values of the site.

Long-Term Management Objectives (100 years)

Maintain and enhance silent sports recreation opportunities within a relatively extensive acreage of older, intact, connected forest that provides aesthetic appeal. Maintain an old forest of red maple, pine, mixed hardwood, and oak species that is structurally and functionally diverse and includes areas of coarse woody debris and standing dead snags.

Short-Term Management Objectives (50 years)

- Provide a system of aesthetically pleasing, sustainable trails for hiking, cross-country skiing and mountain biking that offer opportunities for quiet enjoyment of the forest.
- Develop and maintain an older, closed canopy, un-fragmented forest of longer-lived species such as red maple, red and white pine, and oak on north and east slopes.
- Enhance forest structural diversity and development of old forest characteristics, such as large diameter trees, standing dead snags, and coarse woody debris where appropriate.
- Protect, manage, and enhance the natural communities for ecological values and rare species habitat needs identified in the Biotic Inventory.

FIGURE 2.19 OVERMEYER HILLS CURRENT LAND COVER

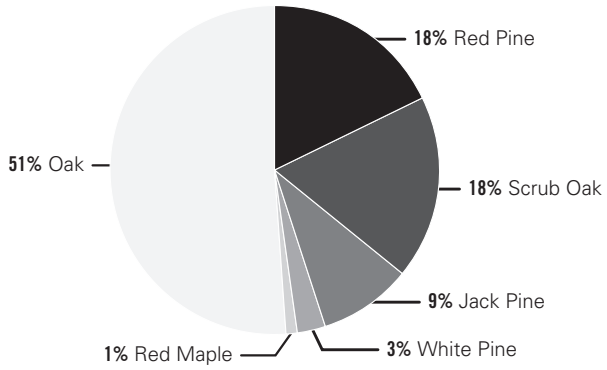


TABLE 2.23 OVERMEYER HILLS CURRENT AND PREDICTED LAND COVER

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
Forested Types				
Oak	1,146	51%	974	43%
Red Pine	414	18%	394	18%
Scrub Oak	398	18%	340	15%
Jack Pine	193	9%	193	9%
White Pine	59	3%	139	6%
Red Maple	31	1%	201	9%
Total	**2,241**	**100%**	**2,241**	**100%**

Area Specific Resource Management Prescriptions

- Maintain oak through commercial thinning, timber stand improvement practices, prescribed fire, and other techniques described in the DNR Silviculture and Forest Aesthetics Handbook.
- Promote the growth and retention of large oak and pines through techniques such as thinning, extended rotation, and managed old forest. Follow the DNR Old Growth and Old Forest Handbook, particularly related to Managed Old-Forest.
- Retain snags and coarse woody debris to promote old growth characteristics whenever their retention does not present hazards or conflict with other forest management activities.
- Conduct forest management activities in ways that minimize visual, noise, and access impacts to recreational users.
- Implement aesthetic management prescriptions along trails consistent with the DNR Silviculture and Forest Aesthetics Handbook guidelines for the Class A Aesthetic Zone.
- Designate the 379 acre Wildcat Ridge State Natural Area.
- Control of invasive species may occur.
- Remove hazard trees to provide a safe setting for recreational users.

Area Specific Recreation Management Prescriptions

- Install electrical service at the warming shelter located at the Smrekar Trail parking lot.
- Abandon the existing well along the Central Loop trail system and install a new well and accessible hand pump at the trailhead located at the Smrekar Trail parking lot.
- Construct a new storage facility at the Smrekar Trail parking lot and abandon the storage facility at the Wildcat Trail parking lot.

AREA 19: CAMPGROUNDS AND DAY USE AREAS

This 155 acre recreation management area is comprised of five campgrounds and several day use facilities scattered throughout the property (Table 2.24). A variety of amenities, such as picnic areas, swimming, playground equipment, shelters, and outdoor cooking grills, are provided for visitor use and vary depending on site. Day use facilities are also found at the Castle Mound, Pigeon Creek, and East Fork Campgrounds. These areas offer opportunities and amenities for relatively intensive recreational uses and activities, and are classified as Type 4 Recreational Use Settings (NR 44.07).

This section addresses the management of forest and land resources within the recreation areas. A separate Recreation Management section within this chapter addresses the changes to facilities within these areas.

Description of the Forest Resource
The campground and day use areas consist of facilities and infrastructure in both open and wooded areas.

Long-Term Management Objectives (100 years)
Maintain the area as an attractive and safe setting for intensive types of recreational use, such as camping, picnicking, water sports, trail activities, and nature interpretation. In forested areas, maintain a mixed forest dominated by older, larger trees.

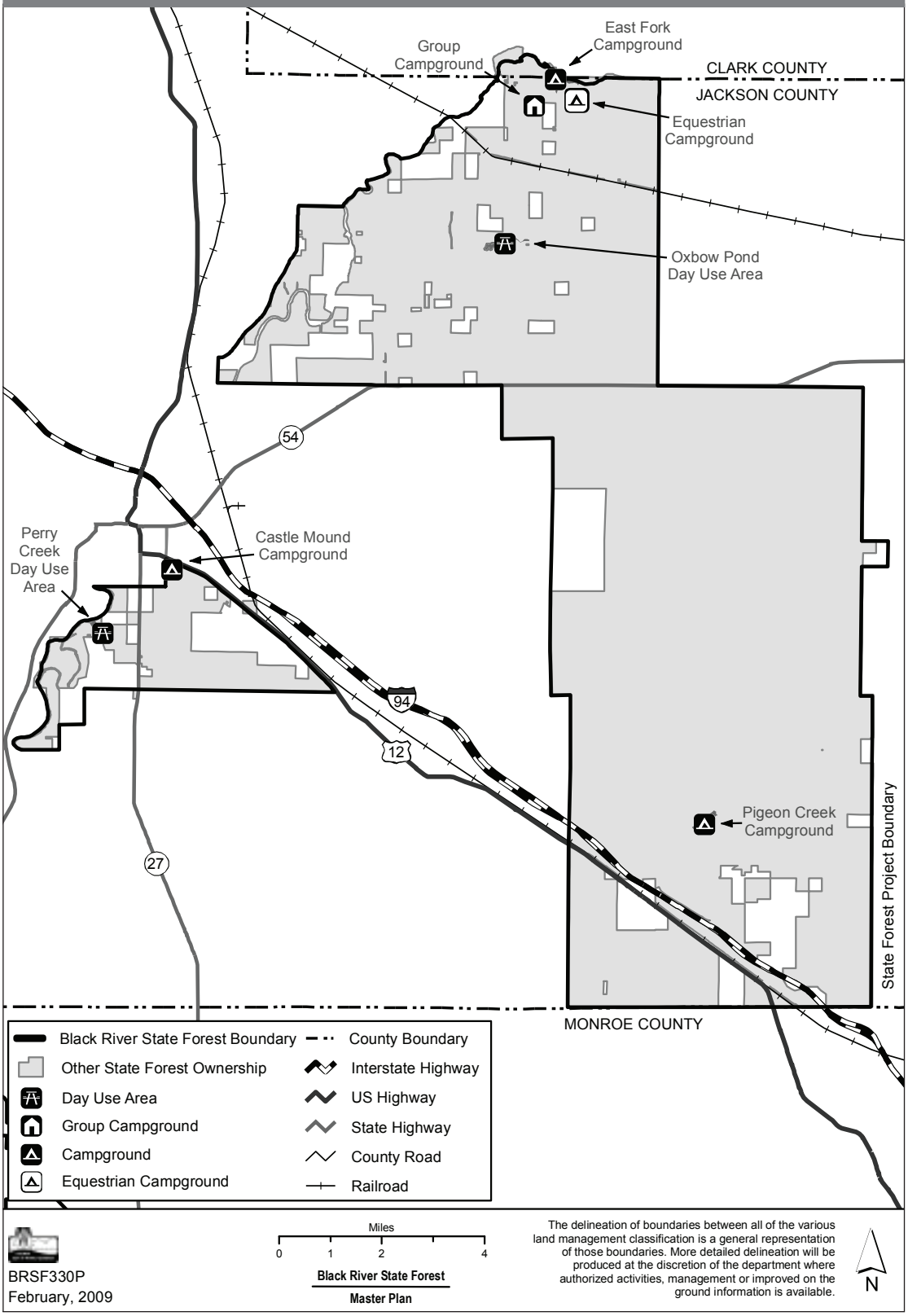
AREA 19 SUMMARY

- Protect and enhance scenic, aesthetic, and recreational values.
- Maintain and enhance forest resources and open areas in a way that is compatible with adjacent management areas.
- Ensure user safety by removing dead or other hazard trees and vegetation.

TABLE 2.24 CAMPGROUNDS AND DAY USE AREAS

Facility	Acres
Castle Mound Campground	39
Pigeon Creek Campground	33
East Fork Campground	25
Equestrian Campground	8
Group Campground	13
Perry Creek Day Use Area	7
Oxbow Pond Day Use Area	30

MAP 2.25 CAMPGROUNDS AND DAY USE AREAS



Short-Term Management Objectives (50 years)

- Provide opportunities for safe, high quality, modern, intensive recreational uses featuring modern camping, primitive camping, day uses, nature interpretation/education, and a variety of trail uses during different seasons.
- Favor longer-lived, larger tree species such as white and red pine and oak species.

Area Specific Resource Management Prescriptions

- Conduct forest management activities at times and in ways that will minimize visual, noise, and access impacts to recreational users.
- Implement aesthetic management prescriptions along trails consistent with the DNR Silviculture and Forest Aesthetics Handbook guidelines for the Class A Aesthetic Zone.
- Control invasive species at campgrounds and day use areas.
- Provide and maintain screening between campsites using native vegetation.
- Remove hazard trees to provide a safe setting for recreational users.

Area Specific Recreation Management Prescriptions

- Increase the number of electric campsites at the Castle Mound Campground, up to a maximum of 28 sites.
- Construct a new office and a new shop building at the Castle Mound Campground.
- Evaluate the opportunity to convert the existing office building into an ADA accessible cabin for the Castle Mound Campground.
- Eliminate vault toilets at the Castle Mound Campground and replace with a modern shower and restroom facility.
- Install an ADA accessible parking area and walkway at the Pigeon Creek Campground.
- Upgrade nature trail and interpretive signage and add an informational kiosk at the East Fork Campground.
- Install a manure storage facility and a woodshed, and improve directional and information signage at the Equestrian Campground.
- Replace or remove the vault toilets at the Group Camp (a restroom will still be available in the indoor group facility).
- Evaluate the need for an expanded parking area at Pigeon Creek after Robinson Beach is closed to public vehicle access.

STATE NATURAL AREAS

After the designation of Land and Recreation Management Areas, and identifying their specific resource management prescriptions, the state forest examined opportunities to further protect areas with exceptional natural features. The Department evaluated sites that could contribute to critical habitat for rare species, provide ecological reference areas, or which contain significant geological or archaeological features. These sites have been designated as State Natural Areas (SNAs). In many cases, the Black River State Forest offers the best representations of these unique attributes in the state or within the central sand plains ecological landscape.

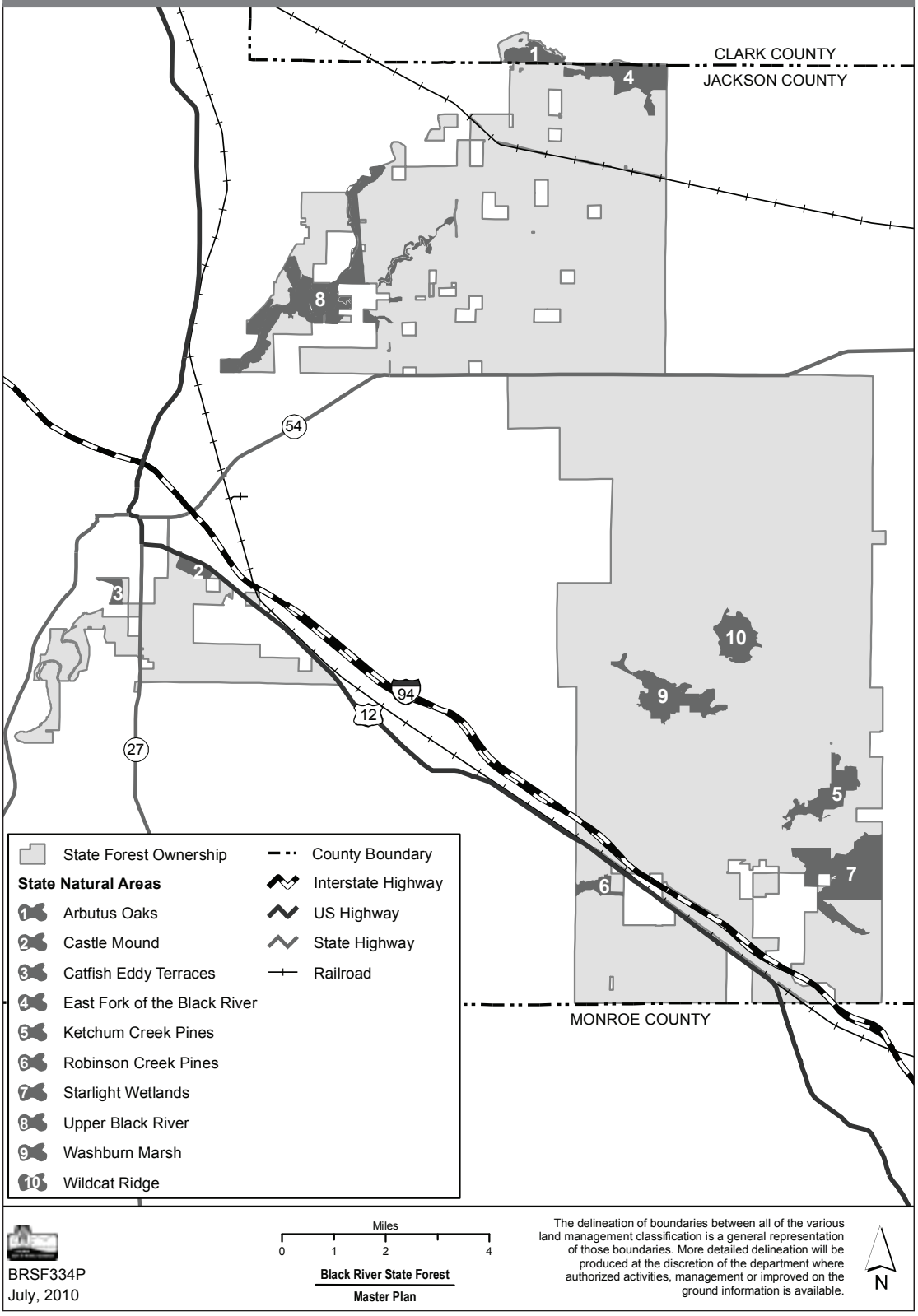
The goals set by the Division of Forestry are developed and presented to the public before the Bureau of Endangered Resources submits candidate sites for SNA designation. As a result, SNAs are considered overlays to Land Management Areas. In this way, the same piece of land can achieve the goals of two different Department programs. Activities for each SNA are the same as the land management prescriptions as well as the recreation uses designed to meet forestry goals. For example, a SNA located within an area managed for white pine will follow the objectives for that land management area, rather than a separate SNA management plan. The exact same timber management and recreation uses would occur with or without SNA designation. See Appendix A for details on the designation process for State Natural Areas.

TABLE 2.25 STATE NATURAL AREAS

Management Area Number and Name		State Natural Areas*			
			Existing Acres	New Acres	Total Acres
Native Community Management Areas		**SNA Name**	**614**	**3,899**	**4,513**
6	Upper Black River	Upper Black River	–	1,454	**1,454**
7	Arbutus Oaks	Arbutus Oaks	–	215	**215**
8	Castle Mound Pine Forest	Castle Mound	91	27	**118**
9	East Fork of the Black River	East Fork of the Black River	–	471	**471**
10	Ketchum Creek Headwaters	Ketchum Creek Pines	140	284	**424**
12	Peatlands	Washburn Marsh	298	267	**565**
		Starlight Wetlands**	–	233	**233**
13	Catfish Eddy Terraces	Catfish Eddy Terraces	–	75	**75**
14	Robinson/Millston Pines	Robinson Creek Pines	85	41	**126**
17	Starlight Wetlands	Starlight Wetlands**	–	832	**832**
Recreation Management Area			**--**	**379**	**379**
18	Overmeyer Hills	Wildcat Ridge	–	379	**379**
Totals			**614**	**4,278**	**4,892**

**State Natural Areas are part of Land Management Areas. Management objectives of these areas are consistent with overall Land Management Area objectives.*
***Starlight Wetlands SNA is one SNA which extends into two different management areas. The total size of the SNA is 1,065 with 233 acres within the Peatlands Native Community Management Area and 832 acres within the Starlight Wetlands Native Community Management Area. The Peatlands therefore have two different SNAs within its boundary.*

MAP 2.26 STATE NATURAL AREAS



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GENERAL FOREST MANAGEMENT PRESCRIPTIONS BY PRIMARY FOREST TYPE

For each forest type there is a specific set of management techniques which favor the maintenance and regeneration of that given type. The following describes the general forest management prescriptions to be used for each primary forest type on the Black River State Forest. Each prescription will be applied wherever management for that specific forest type is an objective, as stated in the individual management areas earlier in this chapter. The individual area management plans may modify or limit these general prescriptions to fit the area.

JACK PINE DOMINATED FOREST

This is an early successional forest type that requires disturbance and full sunlight conditions to regenerate. Historically, jack pine stands regenerated following fire or insect infestation events. Harvest and ground disturbance not only provide for good regeneration of jack pine but also support the development of a diverse mix of grasses, forbs, and shrubs which are important during successional stages of this forest type.

General Management Prescriptions

- On dry sites, clearcut jack pine at biological maturity (45-75 years).
- In mixed stands with white pine, oak, red maple or aspen, clearcut the entire stand at biological maturity (45-75 years) and regenerate to a mixed species composition; supplemental planting of jack pine may be needed to ensure adequate stand stocking.
- Seed tree and shelterwood systems may have application on limited sites and, if implemented, should be closely monitored for results. Post-sale and pre-sale scarification may be required.
- Re-establish jack pine stands through natural regeneration, mechanical scarification, planting (the most effective method if natural regeneration is absent), and post-harvest scarification followed by direct seeding or fire. Herbicide treatments, before or after establishment, may be necessary to maintain this type.

WHITE PINE DOMINATED FOREST

The Black River State Forest has an opportunity to restore a pre-settlement "pinery"condition similar to what existed prior to the logging era. This may be implemented through protection of natural communities, limiting some harvesting practices, managing for old growth characteristics, or intensively managing for timber products on high quality sites.

Natural regeneration is fostered by retaining white pine standards or reserve trees across the property. Natural conversion occurs when white pine has been a significant component in the understory and the overstory trees are removed during a commercial harvest at maturity.

General Management Prescriptions

Depending on origin, composition, and site, several management activities will be used to manage the white pine forest toward the desired objectives:

- Management will be implemented in existing or future designated State Natural Areas to retain large white pine sawtimber.
- Begin thinning pole-size stands, whether plantations or natural stands, at age 35-40 years when the stocking is at or near the "A"level. Overstocked stands should be thinned from below to not less than the "B"level on the stocking guides. Conduct thinnings at 8-20 year intervals, never removing more than 50% of the stand's stocking.
- Mixed white pine stands of oak, red maple, aspen, or jack pine will be managed to maintain natural diversity as long as possible. Thinning should favor crop trees of various species, including those with wildlife value. Mixed stands with short-lived species will most likely be converted to a more pure white pine stand by the first or second thinning cycle.
- White pine plantations will be managed intensely for high quality forest products on an economic, rather than biological, rotation. Thinning to improve growth on crop trees will maintain a more even spacing to maximize production. Pruning, in stages up to 17 feet will ensure quality lumber in the first full log. Thinning and pruning are also encouraged in high quality, well-stocked natural stands.
- Depending on site classification and site conditions, manage white pine to its economic or biological maturity. Regenerate the stand using a shelterwood harvest followed with a final cut 5-20 years later to release advanced regeneration.

RED PINE DOMINATED FOREST

Only a few patches of natural red (Norway) pine forest exist on the Black River State Forest. Most red pine is found in plantations established between 1930-1970; many have been selectively thinned three or four times for forest products.

General Management Prescriptions
Several management activities will be used to manage red pine stands toward desired conditions of large, older trees with diverse understories.

- Once red pine plantations have reached 25 years of age and are fully stocked, periodically thin on a recurring basis at 8-20 year intervals following guidelines in the DNR Silviculture and Forest Aesthetics Handbook.
- At economic maturity (80-140 years), harvest the stand according to prescriptions outlined in the DNR Silviculture and Forest Aesthetics Handbook such as clearcutting, seed tree method, or a shelterwood cut with overstory removal once regeneration is established
- If a stand is identified in the property recon to be managed for biological maturity due to site conditions, the stand should be harvested at 140-250 years according to prescriptions outlined in the DNR Silviculture and Forest Aesthetics Handbook. Acceptable management prescriptions on these sites include clearcutting, seed tree, or a shelterwood cut with overstory removal once regeneration is established.
- Convert stands to natural regeneration if a more desirable species, either conifer or hardwood, is suited to the site.
- Plant red pine on suitable open fields or cropland obtained in future land acquisitions. Hand or machine plant DNR nursery stock following site preparation by mechanical and/or herbicide treatment, if needed, to maintain growth, vigor, and survival. Mix other species within the planting area if the site is suitable to create a diverse stand.

OAK DOMINATED MIXED FOREST

Disturbance is required to regenerate and maintain oak forests. If fire is excluded from an area, subsequent stands tend to be mixed with other species. Scrub oak, consisting of northern pin oak, black oak, and some burr oak, occurs on dry to very dry sandy sites, including ridge tops and south slopes in hilly terrain. Red oak with a mix of white and black oak is dominant on dry-mesic sites. Clearcut and shelterwood systems are used to regenerate these stands, but some non-commercial treatments of oak saplings and seedlings need to be employed in order to maintain any population of oak in the next forest. This forest type has high value for aesthetics, wildlife, and forest products.

General Management Prescriptions

- Regenerate scrub oak naturally through clearcut harvests on rotation intervals of 45-60 years, and in conjunction with jack pine regeneration harvests. Rely on coppice reproduction.
- Use intermediate thinning practices in younger red oak stands (35-80 years) to maintain vigor and health, and to improve growth.
- Manage red oak dominated mixed stands on dry-mesic to moist sites with sawlog production potential on rotations of 80-120 years. On good quality sites, consider managing on an extended rotation of up to 150 years. Regenerate by clearcut or shelterwood methods. Use pre-harvest and post-harvest treatments such as scarification, herbicides, and residual tree removal where appropriate to obtain natural regeneration.
- Manage mixed stands of oak, pine and maple on an even-aged basis favoring long-lived species to maintain natural diversity.
- On hilly terrain where appropriate soil, slope, and moisture conditions exist, manage to promote a red oak component.
- Follow management options outlined in the state forest's Gypsy Moth Management Plan to encourage retention of an oak component during outbreak periods.
- To provide wildlife habitat, aesthetic values, and diversity, seek a variety of age classes and stand sizes. Leave reserve trees as individuals or groups.

ASPEN DOMINATED MIXED FOREST

Aspen is an early successional species that requires disturbance and abundant sunlight to regenerate.

General Management Prescriptions
Depending whether the stand is in a pure or mixed community, different management activities will be used to move the forest toward the future desired state.

- In pure stands, harvest and regenerate aspen naturally through clearcutting at staggered intervals of 30-60 years to produce wider age class diversity. Rely on coppice reproduction.
- In mixed stands where wider diversity is also the future objective, use "coppice with standards"as the primary management strategy. This method removes aspen trees but retains individual oak or pine within the stand, thereby enhancing diversity.
- Provide a variety of age classes and stand sizes across the landscape for wildlife habitat benefits, ecological diversity, and aesthetic value.

FORESTED WETLANDS

Two types of wetland forest exist on the Black River State Forest. Swamp conifers, which contain tamarack, black spruce, jack pine, and white pine in pure stands of individual species or combinations of two or more species growing on sphagnum moss; and swamp hardwoods consisting primarily of black ash and red maple.

General Management Prescriptions

- No management activities will be conducted within wetlands with small sized, slow growing, non-merchantable trees, lowland brush, or open bogs and marshes. However, access across these areas may be necessary periodically for temporary roads. These roads will be limited to frozen ground conditions.
- Productive stands on wetlands capable of producing merchantable timber within their accepted rotation age may be regenerated by limited harvest following guidelines outlined in the DNR Silviculture and Forest Aesthetics Handbook. Timber harvests will only be conducted under frozen ground or very dry conditions, using techniques and equipment that prevent rutting and other negative impacts to the hydrology of the wetland.

BOTTOMLAND HARDWOOD FOREST

The primary species associated with the bottomland hardwood forest include silver maple, river birch, green ash, American elm, hackberry, and an array of upland associated species.

General Management Prescriptions

- Since this forest type lies within important recreation corridors and riparian zones, it will be managed primarily for aesthetic and ecological values.
- Manage and maintain this type at a landscape scale and promote its natural diversity.
- Harvest and regenerate a mixture of species in accordance with the DNR Silviculture and Forest Aesthetics Handbook.
- Implement a shelterwood or group selection harvest method for green ash, elm, and hackberry. Silver maple and river birch will require periodic flooding to adequately regenerate.
- Conduct timber harvests only under frozen ground or very dry conditions to prevent rutting and potential soil damage.

MARSHES AND OPEN WETLANDS

The open landscape on the Black River State Forest that is associated with wetlands includes bog, sedge meadow, poor fen, emergent marshes, and small stream drainages. Sphagnum moss and sedges are the common dominant plants. Most of the open landscape, including some upland grass areas connecting marshes and flowages, are managed for wildlife with waterfowl and Sharp-tailed Grouse as focal objectives. Sphagnum moss has been commercially harvested from post-settlement time to the present and represents less than 3% of the marsh acreage.

General Management Prescriptions

There are approximately 6,000 acres of marsh and muskeg on the forest. Commercial mossing may occur on the forest; however mossing is prohibited within the Peatlands Native Community Management Area to protect peatland habitat and maintain site hydrology. Moss harvesting will follow the guidelines outlined in the most recent version of Department Manual Code 2821.4 "Sphagnum Moss Harvest on State Managed Lands". Access for logging activities across and through marshes will be limited to winter only, frozen ground conditions.

WILDLIFE MANAGEMENT PLAN

The Black River State Forest supports a great diversity of wildlife species, including game, furbearer, and bird species common to Wisconsin. The property's diverse mix of conifer and hardwood forests also has one of North America's richest diversity of breeding songbirds. A wide variety of birds migrate through the state forest as well. The numerous man-made flowages, natural streams and the Black River provide important migratory bird habitat. Endangered and threatened species (listed species) on the Black River State Forest include the following terrestrial vertebrates: Blanding's turtle, wood turtle, Osprey, Bald Eagle, Red-shouldered Hawk, Trumpeter Swan, Whooping Crane, and Kirtland's Warbler. The state forest also contains several Species of Special Concern including various mammals, reptiles, amphibians, insects, fish, and mussels. Terrestrial vertebrates of special concern include the timber (gray) wolf, Black Tern, Northern Goshawk, Merlin, Le Conte's Sparrow, four-toed salamander, American Bittern, Karner blue butterfly, bullfrog, northern myotis bat, and arctic shrew.

WILDLIFE HABITAT MANAGEMENT

The wildlife management program on the Black River State Forest focuses on maintaining and enhancing habitat and assessing the population status of the important game, nongame, and listed species. The abundant wildlife on the state forest requires diverse forest habitats in all the various successional stages from very young through old growth. Diverse and healthy wildlife populations will be maintained by managing the composition and structure of forest habitats integrated with the management objectives and activities outlined for each land management area in the Land Management Section of this plan. Wildlife habitat values are further assured by the wildlife biologists working with foresters on timber sales in order to maximize tree species diversity and improve vegetative structure, consistent with the management objectives for the area.

Forested Habitats

Approximately 20% of the state forest will be managed in areas dominated by jack pine. Jack pine stands will be grown to biological maturity and regenerated through the clearcut system. Jack pine will be harvested in a rotational manner to offer various age classes throughout the forest, offering a shifting mosaic landscape pattern where at any one time any age class can be found. Jack pine forests will be managed through natural regeneration, prescribed fire, and plantation establishment.

Approximately 8% of the Black River State Forest will be managed in areas dominated by aspen through clearcutting with reserves or coppice methods. A diversity of different age classes will be present by harvesting some aspen stands before economic rotation and some aspen stands beyond economic rotation. Aspen forests are typically diverse and contain a mixture of pines, oaks, and maples.

Approximately 21% of the property is currently dominated by white pine, but this percentage is expected to slowly increase in the future throughout the forest. Individual trees will be grown to biological maturity. Stands of white and red pine will be thinned from below and grown to biological maturity. Active forest management will allow the slow expansion of white pine throughout the property.

Approximately 2% of the state forest will be maintained in the scrub cover type. Scrub oak will be managed through clearcutting with scattered reserve oaks and pines.

A small percentage of the property will be maintained in grass and brush openings. Forest openings and bracken grassland communities occur primarily in areas managed for aspen, white birch, oak, and jack pine. Openings will be managed in a shifting mosaic offering corridors and stepping stones of openings between existing permanent large openings found at Dike 17 Wildlife Area, Jackson County Forest, private land, and open marsh land. Openings will be maintained by mechanical mowing, hand cutting, and prescribed fire.

Long-lived trees such as red oak, white pine, and red pine may periodically be left as residuals in clearcut areas as long as their biological maturity allows. Trees will be harvested if they will not survive until the next stand entry. Small clumps of aspen-birch may be reserved in clearcuts for Ruffed Grouse budding and cavity trees. A ring of aspen trees may be reserved around grassy openings. Aspen and white birch trees may be reserved along wetland edges to act as Ruffed Grouse budding trees and as cavity trees.

Vegetative height diversity will develop in areas managed by selective harvests. Most hardwood stands will be managed to promote an all-aged structure including shrubs, saplings, mid-canopy trees, canopy trees, and super canopy trees.

Some large, full-crowned trees with dens and cavities as well as dead trees (snags) will be maintained on appropriate sites in all management areas. These trees will be maintained unless they are unsafe, cause aesthetic concerns, or increase insect pests.

Selected areas and stands will be managed for old growth forest characteristics through active or passive management. Old growth characteristics that provide important wildlife habitat include abundant coarse woody debris, large old trees, abundant large snags, cavity trees, den trees, tall super-canopy trees, and various sized canopy gaps with dense young trees.

Non-forested Wetlands
All non-forested wetlands, including various poor fens, sedge meadows, shrub-carr, rich fen, and open bogs will be protected. These wetlands provide habitat for a wide variety of wetland wildlife including Species of Special Concern. Protective management prescriptions for non-forested wetlands are outlined in the Land Management Section of this plan. Where applicable, these wetlands will serve as a link between existing and new openings.

Ruffed Grouse Management Areas
Ruffed Grouse areas will exist throughout the forest implemented through normal forest management practices and various sizes of scattered timber harvests.

Sharp-tailed Grouse Management Areas
Sharp-tailed Grouse areas will be maintained and created in a shifting mosaic through the use of normal forest management practices. Dike 17 Wildlife Area will act as a core site, with larger clearcuts acting as corridors and temporary habitat areas, until these cut units regenerate. In certain situations, burning, scarification, and delayed planting may be incorporated into these cuts to delay regeneration and offer a few extra years of Sharp-tailed Grouse habitat.

Wildlife Flowages
Twenty flowages, specifically managed for wildlife habitat, exist on the Black River State Forest. These will be maintained; however, there may be situations, on a case-by-case basis, that warrant abandonment of an individual flowage. The determination for abandonment will be a joint decision between wildlife, fisheries, engineers, and forestry staff. No new flowage construction is planned.

Aquatic Habitats
Wild rice bed establishment will be attempted on four flowages within the Dike 17 Wildlife Area on the Black River State Forest. Wild rice is significant in Native American culture and is an important wildlife habitat. Wild rice beds will receive an annual inventory and be managed for wild rice production.

Undeveloped lake and stream shoreline is important aquatic wildlife habitat. All undeveloped lake and stream shoreline will be managed to protect water quality, maintain wildlife and fisheries habitat, and enhance aesthetics. Shoreline management will include vegetative zones. They will be maintained by following Best Management Practices (BMPs) for water quality when performing all forest management activities.

Ephemeral ponds and permanent small ponds provide important breeding sites for amphibians and waterfowl. These sites will be protected through vegetative management adapted to minimize impacts and by following BMPs for water quality.

ENDANGERED, THREATENED, AND SPECIES OF SPECIAL CONCERN

Individuals of all endangered, threatened, and special concern wildlife species will be protected. All known critical habitat for these species will be protected or maintained through management consistent with the Habitat Conservation Recovery Plan or with other guidance developed in consultation with the Bureau of Endangered Resources. Examples of critical habitats include sites used for breeding and foraging such as Bald Eagle, Osprey, and Great Blue Heron nest sites, wood turtle nest sites, Kirtland's Warbler nesting sites, lupine stands for Karner blue butterfly, wolf den and rendezvous sites, Northern Goshawk nest territories, and Trumpeter Swan and Common Loon nest sites. The Natural Heritage Inventory (NHI) will be checked prior to all timber sales, ground breaking projects, and recreational and trail development.

INTEGRATED MANAGEMENT

Activities associated with timber sales directly impact wildlife habitat and represents the primary method for completing forest habitat work on the Black River State Forest. Wildlife biologists will review timber sales annually and provide recommendations to maintain and improve wildlife habitat.

WILDLIFE POPULATION MONITORING

Populations of important game species will be monitored through annual surveys at the local or regional level. Species surveyed include white-tailed deer, black bear, Ruffed Grouse and mammalian predators. Waterfowl are surveyed through the annual statewide waterfowl breeding survey. Populations of important endangered, threatened, and Species of Special Concern will be monitored through annual surveys. Species surveyed include Bald Eagle, Osprey, Trumpeter Swan, Great Blue Heron, Northern Goshawk, Sharp-tailed Grouse and timber (gray) wolf.

Rare and uncommon wildlife such as badger, Great Gray Owl, Black Tern, and Merlins are monitored through reports from staff and citizens. These reports are organized in the Bureau of Endangered Resources' Natural Heritage Inventory.

The possibility of elk being reintroduced into the Black River State Forest is a consideration, and may occur during the life of this plan. The Black River Elk Management Plan addresses management implications of these herbivores on the landscape. Any reintroduction of species will follow state guidelines and best management practices.

WILDLIFE POPULATION MANAGEMENT

Game species are managed through hunting and trapping seasons. Population goals are set for each game species for a local or regional area. Hunting and trapping regulations and population goals are not set through the master planning process. Game populations are managed through regulations and goals set by the Natural Resources Board and the public is involved in all stages of this review and implementation process.

WILDLIFE RESEARCH

DNR, tribal, and university sponsored wildlife research occurs on the Black River State Forest. Current research projects include work on black bears, timber (gray) wolves, turkeys, and Kirtland's Warblers. New research projects may be undertaken provided they do not conflict with the master plan.

FINANCIAL AND WORKFORCE CONSTRAINTS

Activities on the Black River State Forest are implemented based on financial availability and workforce constraints. A wildlife biologist and wildlife technician, stationed at Black River Falls, are funded through the Wildlife Management Bureau and spend part of their time working on the state forest. No endangered resource personnel are on the Black River State Forest staff.

FISHERIES MANAGEMENT PLAN

Water resources in the Black River State Forest provide habitat for a range of fish communities. Management goals and activities for these waters vary by type of water and angling potential. The three main water resources within the forest are warm water streams, warm water lakes, and cold water streams. Management for each type of water resource is described below.

WARM WATER STREAMS

Warm water streams comprise the major water resource within the forest. Most warm water streams are tributaries of the Black River and flow from four major watersheds: East Fork of the Black River, Halls Creek, Morrison Creek, and Trout Run/Robinson Creek. Stream sizes range from 1st order headwaters to the Black River which is a 6th order stream (average flow of 290 cubic feet per second). Surface water in the area originates in wetlands with significant peat deposits. This organic material stains the water, giving the streams an amber color. Due to a lack of significant ground water input, these waters have summer temperatures that regularly get above 70 degrees and thus do not support trout. Most have moderate to low flows and are relatively infertile, although the Black River can have fairly high nutrient levels. Forage and game fish are the predominant species. Many of the small tributaries were dammed to create flowages for wildlife habitat. Little, if any, habitat work is conducted on these waters, and the only fish stocking that occurs is muskellunge to the Black River. For the most part, streams have adequate natural in-stream reproduction or are adequately stocked by fish from the river or from impoundments. The basic statewide fishing regulations currently apply on these streams except for a 40 inch minimum length limit on muskellunge in the Black River, East Fork of the Black River, and Morrison Creek. Currently there are no plans to modify them. Warm water streams in the forest include the Black River, East Fork of the Black River, Morrison Creek, and lower Halls Creek.

Management Objectives

- Maintain the health of waters on the Black River State Forest and their fishery potential.
- Provide quality harvest as well as trophy opportunities (where applicable).

Management Activities

- Continue to conduct electro-fishing and netting surveys according to statewide monitoring protocols and provide results to the public.
- Continue muskellunge stocking in the Black River.
- Conduct beaver control as necessary by limiting dams that slow water flow, impede fish migration, and increase water temperatures and sedimentation.

WARM WATER LAKES

There are very few natural lakes in the forest, and these are mostly oxbow type abandoned channels within floodplains of the major rivers. Most standing waters in the Black River State Forest are impoundments and flowages created by damming of small streams. These are typically acidic, infertile, and have a maximum depth of less than 12 feet. Since most were created for waterfowl and wildlife habitat, fisheries management is a secondary objective. Fisheries, when present, consist of warm water forage species, largemouth bass, panfish, and northern pike. However, most provide only periodic fisheries due to winter freeze-out conditions. Big and Little Oxbow Ponds are stocked with trout prior to the season opener and only provide a short-term put-and-take fishery for these species. By mid-summer, water temperatures are too warm to support trout. Examples of warm water lakes in the forest include: Teal Flowage, Pigeon Creek Flowage, Townline Flowage, and Whitetail Flowage.

Management Objectives

- Maintain the health of warm water lakes and their fishery potential.
- Provide a quality harvest when and where applicable.
- Improve access, especially for those with physical disabilities.
- Improve habitat conditions for those lakes with fishery potential.

Management Activities

- Continue to conduct electro-fishing and netting surveys according to statewide monitoring protocols and provide results to the public.
- Monitor winter water chemistry for those lakes with a fishery to determine when winterkill occurs.
- Continue trout stocking in the Oxbow Ponds.

COLD WATER STREAMS

There are very few cold water streams within the Black River State Forest. These waters have summer water temperatures that do not get above 70 degrees and have moderate flows. The fisheries present in most of these waters consist of brook and/or brown trout. The major waters in the forest that fit this designation are: Robinson Creek and Valentine Creek.

Management Objectives

- Maintain self-sustaining trout fisheries.
- Maintain the health of these waters and their fishery potential.

Management Activities

- Continue to conduct electro-fishing surveys according to statewide monitoring protocols and make results available to the public.
- Conduct beaver control as necessary by limiting dams that slow water flow, impede fish migration, and increase water temperatures and sedimentation.

GENERAL HABITAT MAINTENANCE AND IMPROVEMENT

Habitat loss and shoreline/bank development are common issues on all waters within the state forest. Management activities that enhance habitat (such as tree drops, half logs and bank structures) may be applied on waters, consistent with the site's land use classification, where they would provide a meaningful return to the fishery. Riparian shoreline and stream bank activities have a tremendous effect on the health of the fisheries. Buffer strips and shoreline restoration will be promoted on all waters in the forest.

MANAGEMENT PRIORITIES

Fishery management activities are ultimately based on financial availability and workforce constraints. Attempts will be made to maximize efforts to manage these fisheries for the health of the resource first and secondly for public opportunity.

FISHING REGULATIONS

Control of fish harvests through lake and stream specific fishing regulations is the most effective tool in managing fisheries on state forest waters. A variety of fishing regulations are in effect on the state forest, including closed seasons, bag limits, and length restrictions. These regulations are not set through the master planning process, but through an annual rule making process involving local fisheries staff and warden, conservation congress, DNR Secretary, Natural Resources Board, legislature, and the governor. The public is involved at all the stages in this process.

INVASIVE SPECIES

Aquatic invasive species of concern for the Black River State Forest include Eurasian water milfoil, purple loosestrife, and zebra mussel. Management of invasive species in the waters of the forest will follow Wisconsin's Comprehensive Management Plan to prevent further introductions and control existing populations of aquatic invasive species.

RESEARCH ACTIVITIES

The waters in this area provide unique fisheries research opportunities within impoundments. State and university sponsored studies that have meaningful management applications will be encouraged. These types of studies can provide insight into fisheries issues that will benefit waters well beyond the boundaries of the state forest. All the waters in the forest boundary have management research value. Issues that are of significant management concern are always changing, and any of these waters may meet the requirements of important future studies. Research activities will be carried out in locations and using methods that are consistent with the management classifications and management objectives in this property plan. On-going fisheries studies within the forest include: annual spring netting survey of Teal Flowage to monitor fish population response to recent habitat improvements, annual spring netting survey of Pigeon Creek Flowage to assess fishery potential, frequency and effects of winterkill, and possibility of habitat improvements, and periodic spring netting surveys of other warm water lakes to assess fisheries potential and frequency and effects of winterkill.

RECREATION MANAGEMENT PLAN

BACKGROUND

Recreation on the Black River State Forest is important to many people and plays an important role in the regional tourism economy. Visitors have been coming to the Black River State Forest for generations, and those who vacation or live near the forest know the beauty of its water resources, the diversity of its trails, and the extent of its recreational facilities.

Since the forest was established, annual visitation to the Black River State Forest has increased steadily though the form of recreational interest has changed over the years. Annual visitation to the Black River State Forest is now approximately 300,000 visits per year. Popular recreational activities include fishing, hunting, ATV riding, snowmobiling, skiing, camping, and horseback riding.

The Black River State Forest Master Plan will maintain most of the existing recreational amenities. Changes are designed to meet the demands of today's forest visitor and to improve the quality of the state forest's offerings. Increasing the number of electrical sites at modern campgrounds and enhancing the motorized trail system to address environmental concerns, increased usage, and trail connectivity represent the most significant actions addressed in the plan.

Current and planned recreational facilities are identified on Map 2.27 in the Appendix. An implementation overview of planned recreational amenities (i.e. what the property will look like when all proposed changes are implemented) is identified on Map 2.28, also in the Appendix.

RECREATION MANAGEMENT OBJECTIVES

- Provide opportunities to ride snowmobiles, ATVs, and motorcycles as part of a regional trail network. Trails will be sustainable, well-maintained, and will maximize safety and minimize the impact on sensitive areas, water resources, and other recreational uses.
- Provide modern, rustic, primitive, and equestrian camping opportunities.
- Provide high quality opportunities for day uses such as picnicking, swimming, hiking, and biking.
- Provide opportunities for boating and paddling on the Black River and its tributaries, and non-motorized boating on flowages and ponds within Dike 17.
- Provide a system of aesthetically pleasing, sustainable trails for hiking, cross-country skiing, mountain biking, and horseback riding that offer opportunities for quiet enjoyment of the forest.
- Provide opportunities for visitors to gain a better understanding of the natural resources, scenic amenities, and native communities found in the forest.

CAMPING

The Black River State Forest provides a variety of camping facilities from rustic to modern. Amenities include three family campgrounds, one group camp, one equestrian campground, two canoe campsites, and backpacking by permit.

Changes at camping facilities focus primarily on improving amenities at the modern campground to address changing preferences and demands for services by today's recreational user. In the more rustic campgrounds, the number of campsites may be reduced if the use of these facilities continues to decline. In addition, the Black River State Forest Superintendent has the authority to modify the length of time campgrounds are open based on budget and staffing levels.

TABLE 2.26 CURRENT AND PLANNED NUMBER OF CAMPSITES

Name	Camping Type	Acres	Current		Planned	
			# of sites with electricity	Total # of sites	# of sites with electricity	Total # of sites
Castle Mound	Modern	43	6	35	up to 28	35
Pigeon Creek	Rustic	22	0	38	0	as few as 27
East Fork	Rustic	28	0	24	0	as few as 15
Horse Camp	Equestrian	15	0	12	0	12
Group Camp	Group	9	1	1	1	1
Canoe Camping	Primitive	NA	0	2	0	2
Total		**117**	**7**	**112**	**up to 29**	**as few as 92**

Modern Campground
The Black River State Forest has one modern campground. In 2008, Castle Mound Campground provided 35 campsites with limited campsites open during the winter. Electricity is available at six sites. One site is ADA accessible. The campground provides paved roads, shower facilities, flush toilets, a firewood shed, and a sanitary dump station which are open seasonally. Water is available year-round. A shop, storage building, maintenance yard, pole building, and contact station are currently located near the campground. Campsites are reservable at the Castle Mound Campground from May through September.

Improvements at the Castle Mound Campground will increase the number of campsites with electricity up to 28 sites to meet current and future visitor expectations. Extended spur lengths at selected campsites will accommodate larger and longer vehicles. In the future, relocation of the trailer dump station will be considered to improve access for campground users. Vault toilets will be replaced with flush toilets. A new shower facility will be constructed. The existing shower building will be maintained and re-evaluated in the future for its functionality due to its current location.

Additional planned improvements at the Castle Mound Campground include construction of a new office and maintenance building. The office (contact station) will provide accommodations for all recreational staff. The existing office building (contact station) will be removed and evaluated for conversion into an ADA accessible cabin. New interpretive signage will be incorporated with the new office building. These improvements will require a redesign of the existing service drive. The existing maintenance facility will be razed after the new building is completed.

These projects will enhance the quality of facilities offered at the Castle Mound Campground and will accommodate campers looking for a less remote, more developed camping experience. The improvements will also address health and safety issues for staff, consolidate employees into one office facility, and improve customer service. In addition, the road redesign and modernized buildings will enhance the aesthetic quality of the camping experience for visitors.

Rustic Campgrounds
The Black River State Forest has two rustic campgrounds providing a total of 62 campsites. East Fork Campground is open seasonally while Pigeon Creek Campground is open year-round. All campsites are available on a first-come, first-served basis and no electricity is provided. The campgrounds, located at opposite ends of the property, include vault toilets, hand pumps for water, a firewood storage shed, and a contact station. One ADA accessible site is available at Pigeon Creek Campground.

If visitor use at the rustic campgrounds declines by 20% over three consecutive years (based on the 2000-2005 average), at that time the decision will be made to either reduce the number of campsites or to upgrade the facilities to modern campgrounds with amenities such as showers and flush toilets. The decision will be based on recreational trends and visitor demand in the area.

**The 2000-2005 average annual number of visitors ("visitor use") was 7,679 for Pigeon Creek, and 4,354 for East Fork.*

Additional changes at the rustic campgrounds include increased self-registration, and the installation of erosion control measures between campsites and along the river shoreline at East Fork.

Equestrian Campground
The Equestrian Campground has 12 sites designated strictly for horse camping available on a first-come, first-served basis. Each site has a picnic table, fire ring, and tethering post; one large group fire ring is also available. The campground has vault toilets and a seasonally powered solar pump for water. Electricity is not available. The campground is not plowed during the winter months.

Future improvements will include a manure storage facility, a firewood shed, and improved directional and informational signage.

Group Camp
The Black River State Forest has one group camp located at the north end of the forest which is a popular destination enjoyed by many. Reservations are required, with a two-day minimum stay on weekends. The camp includes both an indoor four-season facility and outdoor group campsites. The cabin has wooden bunk-beds to sleep twelve people and is equipped with a stove, refrigerator, gas fireplace, heated floors, and a bathroom with shower. The building is ADA compliant. An additional outdoor area accommodates a maximum of 50 people in tents or trailers. A year-round water supply is available in the heated cabin, while vault toilets, picnic tables, cooking grills, fire rings, and a dog kennel are available outdoors. Parking for 10 vehicles is available. Replacement or removal of the vault toilets is planned (a restroom will still be available in the indoor group facility).

Primitive Camping
Backpack camping is allowed anywhere on the forest, except on any island or near any designated recreational use area. Campers must be at least one mile away from their vehicle and 100 feet from any designated trail or road. Backpackers must obtain a Special Camp Registration Permit prior to camping. Currently water is available at each designated campground and at the Wildcat Trail parking lot. In the future, a water supply is planned at the Smrekar Ski Trail head. Toilet facilities are also

provided at the Wildcat Trail, Smrekar Trail, Robinson Beach, and Oxbow Day Use Area. The Smrekar and Wildcat hike/bike/ski areas also represent the primary backpacking destination in the state forest.

Camping outside designated campgrounds is also allowed during the nine-day deer gun hunting season. Campers can start camping the Thursday before the hunting season starts. Hunters must obtain a Special Camp Registration Permit prior to camping and must indicate their camping location. No designated water or toilet facilities are provided for this use. Up to 160 permits are issued annually.

There are no planned changes for primitive camping on the state forest.

Canoe Camping
Two canoe campsites (considered primitive) south of Black River Falls, off Hawk Island Road, are available to canoeists only. Camping is limited to one night. Each site has a picnic table and a fire ring. There is a portable toilet shared for both campsites. No improvements are planned for these sites.

DAY USE AND PICNIC AREAS

Day use areas provide state forest visitors opportunities to picnic, swim, hike, bike, ski, fish, or simply enjoy the natural beauty of the area. Some sites also feature scenic vistas, hiking and nature trails, boat landings, or fishing piers. All day use areas on the Black River State Forest are rustic classification and only minor improvements are planned.

Fee Day Use Facilities
Fee day use facilities are located in the forest and provide visitors with a variety of amenities. Castle Mound has an interpretive trail, a bike trail, parking for 54 vehicles, playground equipment, a log cabin shelter with picnic tables, outdoor cooking grills, two kiosks, and a lookout tower. Pigeon Creek has a swimming beach, playground equipment, boat launch, parking for 40 vehicles, picnic area, contact station, information kiosk, interpretive trail, and bike trail. East Fork has a canoe landing, parking for 30 vehicles, contact station, and nature trail. These facilities are in need of minor upgrades to maintain the quality of the recreational experience.

Planned improvements at East Fork include upgrading the nature trail, updating interpretive signs, and adding an informational kiosk.

Robinson Beach will be closed to public vehicles and all improvements will be removed, including facilities, parking lots, and roads. The area will continue to be open for walk-in access for fishing and non designated recreation activities including swimming and other non-motorized activities. A modification to NR 45.11(7)(j) will be sought in order to allow watercraft use, such as canoes or kayaks, on Robinson Creek Pond. Upland and shoreline improvement projects, such as restoration of natural vegetation, will occur at Robinson Beach. The existing small graveled parking area along Cranmore Road, which has a current capacity for two vehicles, will be increased in size to accommodate a total of 6-12 vehicles for access to the south end of Robinson Beach Pond. This will provide access for those who still wish to recreate in this area at a low cost to the Department in terms of maintenance and enforcement. If erosion becomes an issue, the existing foot path from the parking lot along Cranmore Road to Robinson Beach Pond will be upgraded to a moderately developed trail including improvements to the base.

Pigeon Creek will be improved to accommodate additional users directed from Robinson Beach. If use significantly increases at Pigeon Creek, then a small paved parking area may be added near the entrance of the campground. An ADA accessible parking area and walkway to the beach will be constructed. Minor improvements will be made to the swimming area. Other changes at Pigeon Creek include the potential deepening of Pigeon Creek Flowage to improve fishing quality. Fish structures may be added.

Non-Fee Day Use Facilities
Three non-fee day use facilities are located on the state forest. Parking and limited picnic facilities are available. Perry Creek Day Use Area includes a cement boat landing ramp and a primitive hiking trail. The Dike 17 Tower Area has an observation tower and interpretive signs.

All existing designated non-fee day use areas will be continued under the plan. The Dike 17 Observation Tower will be evaluated in the future to determine the need for renovation, replacement, or removal.

Swimming
Swimming occurs at both designated and non-designated swimming beach areas. A designated beach has a regulatory marker or posted notice. Non-designated swim areas are any

TABLE 2.27 BOAT AND CANOE LANDINGS ON THE BLACK RIVER STATE FOREST

Name of Landing	Motorized	Canoe
Perry Creek	Yes	Yes
Teal Flowage	Yes	Yes
East Fork	No	Yes
Bottom Road	No	Yes
Halls Creek	No	Yes
Masons Landing	No	Yes
Canoe Campsite	No	Yes

waters that are not signed as "closed to swimming". Swimming is at the user's discretion since state forests do not supply lifeguards at any beach.

Pigeon Creek will remain as a designated swimming area. Robinson beach will no longer be a designated swimming area and visitors will be directed to Pigeon Creek.

Boat and Canoe Landings

The Black River State Forest has two boat landings for motorized craft at Perry Creek and Teal Flowage, which can also be used as canoe landings. There are six designated canoe landings. Some sites experience erosion problems due to rugged terrain or seasonal, fast water flow conditions.

Halls Creek landing will be reconstructed to accommodate fast water and steep bank conditions. If a new canoe landing is developed along the Black River, possibly at Paddy's Rest, then the existing Bottom Road canoe landing will be closed.

DESIGNATED NON-MOTORIZED TRAILS

The Black River State Forest will continue to offer a variety of designated trails. The phrase "designated trails" refer to trails that are designed, maintained, and limited to specific uses and are shown on the official map of the forest. Designated non-motorized trails on the Black River State Forest are available for recreational activities such as hiking, biking, cross-country skiing, or horseback riding. The Black River State Forest also offers numerous miles of non-designated "woods roads"which are open to hiking, biking, horseback riding, and snowshoeing, unless posted closed for a specific activity. No additional designated non-motorized trails are planned.

Cross-Country Ski Trails

The existing 24 miles of designated cross-country ski trails available on the Black River State Forest will be maintained. Grooming is done for both traditional and skate skiing when snow conditions allow. Associated facilities include a warming shelter located at the Smrekar trail head and two rest areas

TABLE 2.28 CURRENT AND PLANNED NON-MOTORIZED DESIGNATED TRAILS

Classification	NR 44 Classification	Current Miles	Planned Miles
Hike/Bike/Cross-Country Ski Trails			
Wildcat Loop	Lightly developed	3.5	3.5
Red Oak Loop	Lightly developed	2.5	2.5
Norway Pine Loop	Lightly developed	1.5	1.5
North Loop	Lightly developed	3.5	3.5
Central Loop	Lightly developed	4.0	4.0
Ridge Loop	Lightly developed	1.9	1.9
South Loop	Lightly developed	1.0	1.0
Trail Links	Lightly developed	6.1	6.1
Total		**24.0**	**24.0**
Hike/Bike Trails			
Castle Mound	Lightly developed	2.5	2.5
Perry Creek Segment	Lightly developed	2.5	0.0
Pigeon Creek Trail	Lightly developed	5.0	5.0
Total		**10.0**	**7.5**
Hike/Nature Trails			
Castle Mound	Lightly developed	1.5	1.5
Pigeon Creek	Lightly developed	1.5	1.5
East Forest	Lightly developed	1.0	1.0
Perry Creek	Primitive	1.0	1.0
Total		**5.0**	**5.0**
Equestrian Trails			
Horse Trails	Lightly developed	20.3	17.2
Total		**20.3**	**17.2**

located along the Red Oak and Central trails which include Adirondack shelters, small fire rings, and picnic tables.

In addition, there is a 1.5 mile trail that is used for special events, such as the candlelight ski, that is groomed occasionally.

At the Smrekar Trail parking lot, electrical service will be added to the warming building, the existing contact station will be removed and a new storage facility constructed to replace the small building located at the Wildcat Trail. The well located along the Central Loop will be abandoned due to poor water quality. A new well and accessible hand pump will be installed at the trailhead located at the Smrekar Trail parking lot to provide a better source of potable water in a more convenient location for trail users.

Hiking/Nature Trails
The Black River State Forest offers three designated nature trails located at the three campgrounds totaling four miles of scenic beauty and a one mile primitive trail located at Perry Creek. Hiking is permitted on the designated ski trails when they are not groomed for cross-country skiing, and along the designated horse trails. The nature trail at East Fork Campground will be renovated and interpretive signs installed.

Mountain Biking
Thirty-four miles of designated bike trails are found on the Black River State Forest. Surface areas along the trail vary from sand or gravel to grass; topography is level to hilly. Mountain biking is also allowed on the designated cross-country ski trail when the surface is not groomed for skiing activities. In the future, the section of bike trail between Highway 27 and Perry Creek will be closed due to a lack of connectivity with the Castle Mound trail as a result of a bridge washout several years ago. This will result in a total of 31.5 miles of bike trail remaining.

Equestrian Trail
In 2008 the Black River State Forest offered 20.3 miles of designated equestrian trails. The plan will retain 17.2 miles of the existing trails. A 3.1 mile section of trail between West Clay School Road and Cemetery Road, which was shared with motorized recreational vehicles, will be closed to horse access to improve horse rider safety and to reduce conflict with motorized trail users. However, approximately 1,500 feet of the trail, between Seils Road and Cemetery Road, will remain designated as an equestrian trail. An additional two to 10 miles, starting from the Equestrian Camp, will be evaluated for future designation to create a short loop for horse riding enjoyment. Horses also may be ridden on town roads, logging roads, and other undesignated trails that are not signed as closed to the use. Equestrian riding is prohibited on designated nature trails, hike/bike/ski trails, within designated State Natural Areas, and in the Dike 17 Wildlife Area.

MOTORIZED TRAILS

The state forest's motorized trail system for snowmobiles, ATVs, and licensed dual-sport motorcycles is an integral part of a region-wide trail network that provides several hundred miles of riding opportunities. It provides year-round pleasure for recreational enthusiasts and contributes significantly to the local economy. During most years, the motorized trails on the Black River State Forest are open annually May 15th to October 15th, and December 15th to March 15th. The property manager has discretion to close any trails on the state forest based on safety, budgetary, or environmental reasons such as extreme fire danger or excessive rainfall. Because the state forest trail system links directly with Jackson County Forest and Parks' trails, consultation must occur between the two agencies prior to implementation of a closure or opening. The State Forest Superintendent also has authority to establish speed limits on designated motorized trails within the property boundary.

Beginning in 2008, the Black River State Forest began requiring all motorcycles on state designated trails to be licensed dual-sport motorcycles. Unlicensed motorcycles and dirt bikes, as well as street motorcycles, are not permitted on the state trails. This change is consistent with Jackson County's ordinance and state statutes. If unlicensed motorcycles or dirt bikes become legalized for access on streets, then access to state forest motorized trails may be considered. A decision would be made in conjunction with Jackson County. Street motorcycles, however, would continue to be denied access.

Currently, much of the motorized trail system is experiencing environmental challenges related to erosion or wetland crossings. Much of these issues stem back to the original development of the trails, because they were designed as snowmobile trails for use in winter months. The trails were not originally sited for use by ATVs or dual-sport motorcycles, which have become increasingly popular recreational uses on the state forest. The trails have experienced a steady increase in use since the advent of ATVs in the late 1980s.

This master plan attempts to address these environmental challenges to ensure a safe and sustainable motorized trail system. The objectives for improvements to the Black River State Forest motorized trail system are:

- Meet Department trail standards and establish a sustainable trail system.
- Minimize water quality and wetland impacts.
- Reduce soil erosion.
- Increase rider safety.
- Maintain and improve connectivity to the regional trail network and continue to provide a short loop trail.
- Decrease user conflicts by separating incompatible uses.
- Upgrade and maintain the existing infrastructure.

In general, changes to the motorized trail system focus on improving trail tread, improving wetland crossings, reducing erosion and rutting, and protecting water quality, while improving rider experience and safety. The trail width in some locations will be narrowed where it has expanded from its original size due to heavy use in recent years. Restoration of vegetation in these areas will create a more natural appearance along the trail. Changes also focus on reducing user conflicts while maintaining or improving connectivity to the regional trail network.

As of 2008, the Black River State Forest has 47.8 miles of motorized trails. Of these miles, 33 miles are open to ATV use during the summer and winter ATV seasons and snowmobile use during the winter. An additional 14.8 miles are specifically designated for snowmobile use only. Currently, horse access is permitted on 2.4 miles of the motorized trail between West Clay School Road and Cemetery Road.

When all master plan changes associated with the motorized trail are implemented, including the full development of a new trail connector in the Millston area and the closure of the Wildcat Loop (described in detail in the following sections), a total of 40.6 miles of improved riding pleasure will be available for motorized recreation. ATV/ snowmobile access will be avail-

TABLE 2.29 CURRENT AND PLANNED MOTORIZED RECREATIONAL TRAILS

Trail Type	Current	Planned*	Change in Mileage
Total motorized trail mileage	47.8	40.6	-7.2
ATV and snowmobile mileage**	33.0	26.2	-6.8
Snowmobile only mileage	14.8	14.4	-0.4
Winter ATV mileage***	33.0	21.9	-11.1

** "Planned" refers to the point in time when 7.9 miles of the Wildcat Trail are closed to ATV use (after the Millston Loop is authorized).*
*** While ATV trail mileage on the state forest will be reduced by 6.8 miles, the regional ATV trail network will only be reduced by 1.2 miles pending the new trail connection in the Millston area (see discussion on next page).*
**** The reduction of winter ATV mileage is a portion of the motorized trail which will be closed to ATV riding in the winter months. It is not a physical reduction in trail mileage on the property; therefore, it does not contribute to the total change in motorized trail mileage.*

able on 26.2 miles; however, 4.3 miles of the Castle Mound trail will be open to ATV use only during the summer months to be consistent with Jackson County Forest policy. Snowmobile only access will be offered on 14.4 miles. When all changes are implemented, a net reduction of 7.2 miles of motorized trail on the state forest will result. For a summary of current and future motorized trail miles and locations, see Table 2.29 and Maps 2.27 and 2.28 in the Appendix.

The following list is a summary of the planned improvements to the motorized trail system. All other motorized trails will be retained in their present designated use and location.

Property-Wide

- Upgrade the majority of the motorized trail surface by crowning, installing culverts to divert water, and hauling in aggregate rock materials where needed. Work will be pursued as state and federal waterway/wetland permits are approved and funding is secured; all wetland protection requirements will be met.

Northern Trails

- Eliminate horse access on the motorized trail system, except for 1,500 feet between Seils Road and Cemetery Road, to improve trail safety and minimize user conflicts.

Castle Mound Trails

- Develop a use designation on the Castle Mound trail consistent with the adjoining Jackson County motorized trail. Currently ATV use is allowed during summer months only. Use designation may be re-evaluated and changed in the future.
- Currently, a snowmobile only trail travels along Highway 12 on private land, enters the state forest just north of Castle Mound Road, and travels directly to the 7th Street parking lot. If this private trail should become designated for ATV use in the future, the state forest's adjacent 0.1 mile section would also be designated for ATV use.

Wildcat Trails

General

- Close a 1.8 mile loop of snowmobile only trail to all public motorized access to eliminate conflict between users in the Overmeyer Hills Recreation Area.
- Re-route a short section of trail just south of Stanton Creek Road to address erosion issues. The re-routed trail will be located either on state forest land, or, if the opportunity exists in the future, routed onto Cut-Across Road. Moving the trail to Cut-Across Road requires either acquisition of the town road or having the Town of Millston officially designate the road as a route.
- Increase the parking area along North Settlement Road by up to 25%.

Short-term Management Prescriptions for the Wildcat Loop

- Maintain 7.9 miles open to motorized access for ATVs and snowmobiles.
- Open the trail from the Friday before Memorial Day through Labor Day for the summer ATV season. The trail will be open for the full winter season.
- Install gates at access points to enforce seasonal and temporary closures.
- Trail conditions will be monitored more frequently, especially following precipitation events, with temporary trail closures implemented as needed.
- Trail maintenance (i.e. grooming) will occur at current levels.
- No significant trail improvement projects will be initiated except for safety reasons or if the trail becomes impassable.
- The Wildcat Loop (7.9 miles) will be managed with the prescriptions above until the Millston Loop is authorized for use. After the Millston Loop is authorized, the Wildcat Loop will be closed to ATV use and managed according to the long-term management prescriptions below (2.5 miles will be retained as a designated snowmobile trail).

Long-term Management Prescriptions for the Wildcat Loop

When the Millston Loop is authorized for use, the following management prescriptions will be followed:

- Close a 5.4 mile section of motorized trail, west of Shale Road and south of Kling Road, to all public motorized access.
- Close a 2.5 mile section of trail south of the snowmobile only trail to ATV use, but retain the trail as a designated snowmobile trail.
- Restore significant wetland crossings by removing fill, removing culverts, and allowing natural water flow to occur.
- Retain access for state forest operations on sections of the trail closed to public motorized use.
- If three years after the approval of the master plan by the Natural Resources Board lapse before the Millston Loop is authorized, and trail conditions on the Wildcat Loop degrade significantly, then the appropriate trail improvements, including wetland crossing upgrades and trail base improvements, will be implemented. If major improvements are implemented on the Wildcat Loop, the Millston Loop will no longer be considered, although a legal connector to the Jackson County ATV trails will still be an objective.

Millston Loop

- Participate in and coordinate the cooperative effort to identify and authorize an ATV trail that connects the Town of Millston to the existing Jackson County ATV trails leading to Black River Falls.
- Authorize approximately 1.1 miles of existing snowmobile trail south of Millston for ATV use. This section of trail will only be improved and opened for ATV use after all of the various landowners, potentially including the Town of Millston, Jackson County, Union Pacific Railroad, and the Department of Transportation (DOT), identify and authorize segments contributing to the new trail connector. Trail improvements will be coordinated in cooperation with the landowners identified above.

If the new trail connector is authorized in full, it will provide an additional 6.7 miles of ATV trail in the region, providing both a regional connector through Millston, as well as a short loop trail. When the Millston Loop is developed in full and the Wildcat Loop is closed, the regional ATV trail network will only be reduced by approximately one mile.

STATE TRAILS NETWORK

The 2001 State Trails Network Plan identified a 115 mile active rail corridor from Marshland to Wisconsin Rapids as a potential future long-distance recreation trail. If this rail corridor becomes abandoned in the future the DNR has approval to purchase this corridor pending funding. This corridor travels through approximately four miles in the northern portion of the Black River State Forest.

If the rail corridor becomes abandoned and pursued as a potential recreation trail by the Department, then the future use and development would be determined at that time. Consideration may be given to existing trails that connect to the rail corridor including the portion that crosses the Black River State Forest. The Black River State Forest would be a participant in this discussion.

FISHING

Water access to anglers is primarily provided by boat landings and fishing piers. Currently one fishing pier is located at Teal Flowage and is ADA accessible. The State Forest Superintendent may construct additional fishing piers, or relocate them, as deemed necessary and consistent with the land use classification standards for the site. Fishing regulations are outside the scope of the master plan.

HUNTING AND TRAPPING

The state forest will continue to offer abundant opportunities for small and big game hunting and trapping. The diverse landscape of different forest types, lakes and wetlands currently found on the property will continue to provide important habitat for many game species. The extensive system of logging roads and non-designated trails will continue to be open for hunting access by foot or by motor vehicle. Hunters can apply for a Disabled Motorized Use Permit, which will be approved on a case-by-case basis. Non-motorized areas where one can seek a more remote, solitary, walk-in hunting experience will remain at approximately current levels. Hunting and trapping regulations are outside the scope of the state forest master plan.

EDUCATION AND INTERPRETATION

The Black River State Forest encourages visitors to take the opportunity to learn about forestry, natural history, wildlife management, and other natural resources topics. Currently, nature trails with interpretive signage exist at Castle Mound and Pigeon Creek Campgrounds. Interpretive signs will be developed for the nature trail at the East Fork Campground. Educational programs at Castle Mound Campground will be offered as staffing and budgets allow.

RECREATION LAND USE AGREEMENTS

Currently there are no recreational land use agreements on the Black River State Forest. The Department has a long history of cooperation with private organizations to manage and maintain recreational and essential community facilities. Examples of recreational land use agreements include ski and bike trails, snowmobile trails, youth camps, and public shooting ranges. Land use agreements on the state forest will be evaluated periodically.

AESTHETIC MANAGEMENT ON LAKE AND STREAM SHORELINES

The state-owned shorelines on lakes and streams within the Black River State Forest are designated a Class A Scenic Management Zone. All management activities along state owned lake and stream shorelines will follow guidelines of the DNR Silviculture and Forest Aesthetics Handbook and Best Management Practices for water quality.

Management activities that may be done when needed include: the development and maintenance of authorized facilities, herbicide application, burning, installation of fish habitat improvement devices including tree drops along the shoreline, trail and road construction, erosion control, hazard tree removal in public use areas, the removal of trees to maintain or create scenic vistas and invasive species control.

REAL ESTATE MANAGEMENT

FOREST BOUNDARY EXPANSION

Seven boundary expansion areas, totaling 19,836 acres, have been incorporated into the Black River State Forest project boundary and are shown on Map 2.29 in the Appendix. One goal of the boundary expansion is to protect undeveloped shoreline of the Black River and its tributaries, safeguarding ecologically important habitat, water quality, and scenic values of the Black River watershed. Another goal of the expansion area is to link the Black River State Forest with other nearby publicly owned and managed lands. This includes significant blocks of forested land which would be managed using sustainable forestry practices and would reap associated wildlife, fishery, endangered resources, and recreational benefits. Existing development areas were excluded, where possible, from the boundary expansion project. If all lands were purchased within the expanded property boundary, the Black River State Forest would encompass approximately 88,073 acres, excluding water.

The Halls Creek Area of the boundary expansion includes approximately 9.6 miles of Halls Creek, a tributary to the Black River. This area includes land in Alma and Adams townships, with the boundary following section lines, quarter-quarter section lines, township roads (parts of Stazak Road, West Road, Camp Road), County Trunk E, and the Union Pacific Railroad. Areas of existing development were excluded from the expansion area. The majority of the area is held in relatively large private ownerships along with small acreages owned by Jackson County Forest.

The Hatfield Area, located within Adams Township, includes approximately 2.3 miles of the Black River. This expansion area lies between an area west-northwest of the Black River, 200 feet east-southeast of the toe of the dike and canal created by the Hatfield Hydro Partnership, and south-southwest of the Hatfield Sanitary District property. This parcel is owned by the Hatfield Hydro Partnership.

The East Fork Area represents the largest of the boundary expansion areas. This area includes land in the City Point and Komensky townships, with approximately 7.7 miles of the East Fork of the Black River running through this landscape. A large privately owned trust enrolled in the state's forest tax law program, and Jackson County Forest are the two major landholders within this area, with a few other smaller ownerships scattered throughout.

The North Bottoms Area is located in the Town of Brockway. It is bordered on the north and east by the section line, on the west by the Black River, and on the south by quarter-quarter section lines. This area is primarily owned by one owner and contains approximately 0.9 miles of the Black River.

The South River Area is located in Brockway, Manchester, and Irving townships. The boundary follows primary roads or highways, section lines, and a power line right-of-way. The northern boundary abuts the current state forest ownership while the southern boundary follows the Jackson County line. Areas of existing development were excluded, where possible, from the expansion area. The most significant feature of this area is the 10.1 miles of the Black River that bisects the majority of the area.

The Jay Creek Area includes land sandwiched between the Black River State Forest on the west and the Jay Creek State Natural Area on the east. All land lies in the Town of Knapp.

The Potter Area is located east of Dike 17. It is a mix of pine and oak forest that contains the confluence of Morrison and Town Line Creeks.

The expanded boundary meets the overall ecology, environmental health, and recreational needs of the Black River State Forest. Areas within the expanded boundary would be considered for a range of protection options including purchase, cooperative agreements and conservation easements.

REAL ESTATE ACQUISITION POLICIES

All property purchases are on a willing seller basis. As required by state and federal laws, the Department pays "just compensation" for property, which is the estimated market value based on an appraisal by a certified licensed appraiser. At times, it is in the interest of both the Department and the landowner for the Department to acquire only part of the rights to a property, or an easement. The Department has a number of easement alternatives available to address these situations.

Landowners within the state forest boundary will be contacted periodically by Department staff to explain the Department's land acquisition program and to ascertain whether there is an interest in selling their property. Acquisition priorities within the state forest vary from year to year and are based on a variety of factors, such as resource management or recreation needs and available funding. Acquisition is always based on the landowner's willingness to sell or donate their property.

New land acquisitions will be classified under the land management classification system outlined in Wisconsin Administrative Code NR 44.05. State forest staff will base the

classification of the acquisition on the ecological suitability and state forest management objectives.

AIDES IN LIEU OF TAXES

For all State properties purchased after 1992, the Department makes an annual payment in lieu of real estate taxes to replace property taxes that would have been paid if the property had remained in private ownership. More detailed information on how the Department pays property taxes may be found in a publication entitled Public Lands and Property Taxes, PUB-FR-166 or http://dnr.wi.gov/org/land/forestry/publications/PLPT.pdf.

FUTURE BOUNDARY ADJUSTMENT PROCESS

From time to time, adjustments in the forest boundary are needed. In some cases parcels of land are removed from the boundary to allow alternative, necessary public uses by local governments. In other cases it may be desirable to add small parcels adjacent to the forest so they can be purchased for resource protection or to meet expanding recreational needs. Property boundary changes of 40 acres or more require approval by the Natural Resources Board. Wisconsin Administrative Code Ch. NR 44 provides a plan amendment process that may be used to make adjustments to the forest boundary. Requests to amend the master plan for a property boundary change are forwarded to the Natural Resources Board. If the Board agrees to consider the proposal, the subsequent review process includes public notification and an opportunity to comment. The Board must approve all plan amendments. Because federal funding has been used for land acquisition on the state forest, approvals from federal agencies may also be required prior to removing land from the approved boundary.

EASEMENTS, ACCESS PERMITS, AND LAND USE AGREEMENTS

Easements provide access across state property for utilities, town roads, or county highways. Easements are permanent and would continue to be upheld under the revised master plan. Access Permits provide access across state property to private ownership within the forest boundary. Land use agreements provide for a variety of uses on state forest property, such as snowmobile trails and other recreational facilities open to the public. Land use agreements and Access Permits would continue to be evaluated periodically. The Department may grant new land use agreements where they meet a significant public good and do not conflict with the plan's goals and objectives.

ROAD MANAGEMENT

Access across and within the Black River State Forest is on a variety of roadways including federal, state, and county highways, and town and state forest roads. Some roads are maintained as permanent roads, while others are only temporary for timber harvesting or other management activities. In 2008, the Black River State Forest mapped and classified all roads as part of a property-wide road inventory. The state forest owns and maintains 4.1 miles of fully developed, permanent all-season roads and 10.9 miles of lightly developed roads used seasonally or temporarily. The state forest will not maintain roads for the expressed benefit of private individuals or residents, but may, at the discretion of the State Forest Superintendent, consider land use agreements.

ROAD CLASSIFICATION AND GENERAL ROAD MANAGEMENT

There are several types of road classifications outlined in NR 44.07(3). The classifications reflect a range of development and maintenance standards. Road classifications include primitive, lightly-developed, moderately developed, and fully developed. Each Department managed road is assigned a development classification as part of the road inventory project described above.

Management of lands along the roads within the Black River State Forest will reflect the management objectives for the specified area classifications. All road right-of-ways (66 feet) will continue to be controlled and maintained by their current operator (state, county, or town).

The Department managed roadways within the Black River State Forest will be maintained in part according to the following requirements from the Best Management Practices for water quality:

- Inspect active roads regularly (especially after heavy rainfall).
- Clear debris from culverts, ditches, dips and other drainage structures to decrease clogging that can lead to washouts.
- Keep traffic to a minimum during wet periods and spring breakup to reduce maintenance needs.
- Shape road surfaces periodically to maintain proper surface drainage and remove berms on the edge of the road that trap water.
- Apply non-toxic dust control agents, when necessary, in a way that will keep them from entering lakes, streams and groundwater, or from causing other environmental problems.

State, County, and Town Roads
State, county, and town roads within the state forest boundary will continue to be managed by their respective jurisdictions and are outside the scope of the Black River State Forest Master Plan.

ACCESS POLICY FOR PUBLIC VEHICLES

All state forest roads are open to public access with street licensed vehicles unless the road is bermed, gated, or signed closed. State forest roads are closed to ATVs. The State Forest Superintendent may close a road to public use if it becomes degraded, unsafe, or for law enforcement reasons.

State forests regularly open and close forest roads primarily to conduct forest management. Roads open for management purposes are generally open to the public during the management period (one to two years) and a short time thereafter to allow access for firewood collection or other uses. Following this period they are closed with gates or berms.

AESTHETIC MANAGEMENT FOR ROADWAY CORRIDORS

Forest management techniques can be adjusted along roadways on the forest to ensure the long-term maintenance of scenic conditions is proportionate to the road's level of public use. The DNR Silviculture and Forest Aesthetics Handbook distinguishes three separate road types including Class A, Class B, and Class C roads.

Class A Roads are travel routes with heavy to medium use or roads where the use is for the specific purpose of enjoying scenery. These areas should be developed and maintained to the greatest scenic potential for public enjoyment. All state highways and county roads located within the state forest are classified as Class A roads. All management activities will follow guidelines according to the DNR Silviculture and Forest Aesthetics Handbook.

Class B Roads serve a variety of uses where the public traffic load is generally light to medium. Scenic attractiveness is of equal importance and is in balance with other land management objectives.

Class C Roads are primarily used for management access and public use does not occur, is infrequent, or is primarily for activities such as hunting, fishing, or berry picking. Aesthetics are considered in the management along these roadways; however, they are secondary to the prescribed land management activities for the area.

NON-METALLIC MINING POLICY

The Department may use gravel, sand, fill dirt, or other fill material from Department-owned lands for Department use. Under certain circumstances other government bodies or agencies may also have access to these materials. Section 23.20 of the Wisconsin Statutes states, "the department may permit any town, county, or state agency to obtain gravel, sand, fill dirt or other fill material needed for road purposes from any department-owned gravel pit or similar facility if this material is unavailable from private vendors within a reasonable distance of the worksite. The department shall charge a fee for this material commensurate with the fee charged by private vendors."

Any non-metallic mining in the Black River State Forest, whether by the Department or as authorized under s. 23.20, Stats., is regulated under the reclamation requirements of NR 135, Wis. Adm. Code, - except for sites that do not exceed one acre in total for the life of the mining operation or are otherwise exempt under s. NR 135.02(3), Wis. Adm. Code. Site reclamation under NR 135 is administered by the county — or in some cases municipal — regulatory authority.

NR 135 requires mining sites to be reclaimed according to a reclamation plan to meet uniform state reclamation standards. Most Department of Transportation (DOT) projects are exempt from NR 135 but subject to WisDOT's own mining site restoration requirements as provided in s. NR 135.02(3)(j), Wis. Adm. Code. In general, DOT and its contractors would be discouraged from non-metallic mining on the state forest property. The use of state-owned land by the state and municipalities for gravel pits and sand will continue on a case-by-case basis. Nonmetallic mining at new sites will not be permitted where a Geological Feature of Importance has been identified.

IMPORTANT GEOLOGIC FEATURES

The Black River State Forest's geology is unique amongst the state forest system. The property lies at the edge of the glaciated central plains, east of the "driftless" area of Wisconsin. The state forest includes part of the former bed of glacial Lake Wisconsin, un-glaciated buttes, sandstone hills and castellated bluffs. Because many of these features contain sand and gravel deposits, they would be subject to extraction and other disturbances if not on public land. The Department recognizes the importance of setting aside and preserving representative examples of these non-renewable geological features to serve as a base for geological and ecological educational programs and as a baseline against which to compare sites that become disturbed in various ways.

GENERAL ADMINISTRATION AND MANAGEMENT POLICIES AND PROVISIONS

The following section describes general policies and provisions that are applied to all lands of the Black River State Forest that are under state ownership.

FOREST RECONNAISSANCE

The state forest uses a forest inventory system to gather and record information on its land. The database created from the inventory captures the physical description of these areas (dominant forest cover type, soils, ecological attributes, stand origin, guidelines, restrictions and goals). Reports are generated to summarize forest stands that are scheduled for management review. The acreage listed for review is considered the forest's "sustainable harvest" meaning those lands are due for a decision regarding management. Some stands inventoried, such as passive management zones contained in some native community management areas, are excluded from the management schedule. Forestry staff conduct field exams to verify whether stands schedule for management are ready for the prescription. If stands are not yet ready for management, the reconnaissance database is updated and rescheduled for future review. Stands rescheduled for future review are still considered accomplishments toward the forest's annual sustainable harvest acreage. For stands that are ready for management, forestry staff consult with other Department programs such as endangered resources, fisheries, and wildlife to ensure an integrated resource approach prior to establishing the proposed practice. When establishing the practice, silvicultural guidelines and BMPs for water quality are followed. After a management practice is completed, the forest reconnaissance database is updated. In the future, the state forest will be using a Continuous Forest Inventory (CFI) system in conjunction with the reconnaissance system. This system will track growth, mortality, and management of forested lands and allow for more concise management of state forest lands. Using the Continuous Forest Inventory system will not change the objectives stated in the master plan.

BEST MANAGEMENT PRACTICES FOR WATER QUALITY

All management activities within the state forest will follow, as a minimum standard, the guidelines in Wisconsin's Forestry Best Management Practices for Water Quality: Field Manual for Loggers, Landowners and Land Managers (DNR PUB-FR-093-03).

FOREST PEST CONTROL

As stated in Wisconsin Statute 26.30, it is the public policy of the state to control forest pests threatening forests of the state. Within the Black River State Forest, any significant forest pest event will be evaluated with consideration given to the property management goals and the potential threat of the pest to other landowners. Infestations of the non-native gypsy moth caterpillar will be managed according to the forest's Gypsy Moth Management Plan. Responses to significant infestations from other forest pests, including but not limited to the Emerald Ash Borer, may include timber salvage or pesticide treatments. Any response to a significant pest outbreak will be evaluated by an interdisciplinary team of scientists and communicated through press releases and notices to interested parties.

INVASIVE SPECIES CONTROL

Invasive non-native species have become recognized in recent years as a major threat to the integrity of the state forests. These species have the ability to invade natural systems and proliferate, often dominating a community to the detriment and sometimes the exclusion of native species. Invasive species can alter natural ecological processes by reducing the interactions of many species to the interaction of only a few species.

If detected, invasive species may be controlled using appropriate and effective methods, including but not limited to the use of herbicides, cutting, or hand removal. Control methods may be restricted in certain sensitive management areas. Before initiating control measures, the management prescriptions for the area being treated will be referenced. The property will develop and maintain an invasive species inventory and control plan. In addition, Best Management Practices (BMPs) for Invasive Species will be incorporated into management practices on the property.

The installation of power washers for ATVs at ATV parking lots will be considered as a potential tool to limit the spread of invasive species.

CHEMICAL USE

Approved herbicides and pesticides may be used for various purposes on the forest, such as to control invasive plants, to control plant competition in forest regeneration areas, or for insect control except as restricted in the management prescriptions in this master plan. All Department procedures and herbicide and pesticide label requirements will be followed.

ENDANGERED, THREATENED AND SPECIES OF SPECIAL CONCERN PROTECTION

The Black River State Forest and surrounding Meadow Valley landscape contain 119 rare animal species including 27 that are State endangered or threatened and 49 rare plant species including 10 that are State endangered or threatened. Five federally endangered or threatened animals also were identified through inventories conducted by the Endangered Resources program.

All management prescriptions in the master plan will consider the needs of these species and the potential impacts to the species and their habitat. Management actions being planned on the state forest are checked against an up-to-date database of listed species to assure that no department actions result in the direct taking of any known endangered or threatened resource. Please refer to Appendix B for a listing of the endangered, threatened, and Species of Special Concern found on this property.

The Karner blue butterfly (Lycaeides melissa samuelis) (Kbb) was listed as a federally endangered species in December of 1992. The Kbb inhabits oak/pine barrens, a globally rare vegetative community that exists on the Black River State Forest. The historic range of Kbb extends from Minnesota to New York and New Jersey. A Karner Blue Butterfly Recovery Plan was published by the U.S. Fish and Wildlife Service in 2003. That plan designates recovery properties across the Kbb range and assigns population goals for each property. The Black River State Forest is included in that listing with a goal of one population with at least 3,000 Kbb (as stated in the 2003 Recovery Plan). Several potential recovery sites have been identified on the forest. When additional information has been collected on Kbb populations and management potential, a Recovery Implementation Plan will be developed. The property will follow the most current version of the Kbb Recovery Implementation Plan, along with the Karner Blue Butterfly Habitat Conservation Plan.

FUNDING CONSTRAINTS

Many of the initiatives in the master plan are dependent upon additional funding and staffing. Operational funding for state forests is established bi-annually by the state legislature. Development projects follow an administrative funding and approval process outside of the master plan. Therefore, a number of legislative and administrative processes outside of the master plan determine the rate this master plan can be implemented.

DISABLED ACCESSIBILITY

All new construction and renovation of facilities will follow guidelines set forth within the Americans with Disabilities Act (ADA) and will also be done in a manner consistent with NR 44 standards of the land use classification of the site where the development is located. Across the Black River State Forest, the State Forest Superintendent has the authority to make reasonable accommodations for people with disabilities, consistent with the requirements of the area's land use classification.

FACILITY MANAGEMENT

New or renovated recreational facilities will be designed according to state building codes and Department design standards and codes. The State Forest Superintendent may also close and relocate campsites, renovate facilities, relocate trail segments and post speed limits on trails as deemed necessary.

The State Forest Superintendent may maintain and construct storage buildings, employee housing, and/or other similar facilities to support the management of the state forest, as is authorized by normal Department facility approval processes. The structure's location and design must be consistent with the land classification requirements in NR 44 and the management objectives for the area in which it is located.

PUBLIC HEALTH AND SAFETY

All facilities will comply with federal, state, and local health and sanitation codes; such as well testing, campground licensing and wastewater treatment. The State Forest Superintendent has the authority to close campsites or campgrounds, trails, and other facilities on the forest when necessary due to health, safety, or environmental damage concerns.

Within designated public use areas such as campgrounds, picnic areas, parking lots, and high use trail systems, trees or other natural elements that are deemed public hazards will be removed. Safety inspections are done at least twice per year.

EMERGENCY ACTION PLAN

The property maintains on file an emergency action plan that describes staff response and coordination with other agencies to natural disasters as they affect public safety and facilities. It is reviewed annually.

AUTHORIZED RESPONSE TO CATASTROPHIC EVENTS

Wildfires, timber diseases, and insect infestations shall be controlled to the degree appropriate to protect the values of each management area. Necessary emergency actions will be taken to protect public health and safety. Appropriate management responses to catastrophic events are determined on a

case-by-case basis, and action will be taken as appropriate. At a minimum, salvage of trees damaged by wind, fire, ice, disease, or insects may occur if consistent with the objectives of the management area.

FIRE SUPPRESSION

As stated in Wisconsin Statutes 26.11, "The Department is vested with power, authority and jurisdiction in all matters relating to the prevention, detection and suppression of forest fires outside the limits of incorporated villages and cities in the state except as provided in sub (2), and to do all things necessary in the exercise of such power, authority and jurisdiction." Forest fire suppression actions within the state forest will consider the property management goals and the threats of the fire to life and property. Appropriate techniques will be used in each event to provide effective fire suppression while minimizing resource damage. Selected areas of the state forest are periodically used for fire equipment training purposes.

REFUSE MANAGEMENT

Refuse is collected by a private contractor from designated sites at campgrounds and other primary use facilities. Recyclables are also collected by the property. Visitors are required to carry out any refuse they bring when no designated refuse or recycling receptacles are available. This carry-in, carry-out policy applies to most primitive campsites, trails, and boat landings. Burying of refuse is not allowed anywhere on the property.

CORRECTION CREW ACTIVITIES

The Department of Corrections operates a minimum security facility on the Black River State Forest. When working on the state forest, correction crews perform duties under the guidance of a sergeant with all work assignments pre-approved by the State Forest Superintendent. A Memorandum of Understanding between the two agencies will be maintained to describe appropriate work projects on the state forest.

MILITARY ACTIVITIES

Use of the property by the military will be restricted to activities that are compatible with the objectives of the master plan. Approved military activities require a special use permit approved by the State Forest Superintendent. Military activities that generally occur on state forests include: orienteering training, wilderness camping, cooperative training, and development projects that further the goals of the property, such as trail construction or fish habitat improvement. Other activities consistent with the master plan and Department policies may be considered and approved by the property manager.

RESEARCH

The Black River State Forest provides an operational and strategic location for experimental trials and research, especially with regard to tree improvement, genetics, forest health and flowages. The research conducted by Department managers, scientists, and educational partners can be beneficial for the forest, the Department and the general public. Scientific research that is compatible with the ecological and aesthetic attributes of the site is generally supported. The State Forest Superintendent has the authority to approve or deny requests for research projects on the Black River State Forest.

PROPERTY WIDE MANAGEMENT OF DAMS AND FLOWAGES

The Black River State Forest contains 20 man-made impoundments and flowages constructed by damming small streams. The dams were created in the 1930s by the Resettlement Administration to create large shallow impoundments within the wetland areas of the forest. Over 90% of the impoundments created during the 1930s are still present on the forest today.

Maintenance, repair, and/or removal of dikes and dams will be evaluated and conducted on a case-by-case basis, based on cost-effectiveness, property needs, anticipated benefits, and wildlife habitat impacts. Existing dams and flowages will be maintained through tree and brush removal, mowing, and visual inspections of structures. Consultation with the Dam Safety Engineer will occur prior to making any major changes to the dike and dam system.

FOREST CERTIFICATION

In 2004, Wisconsin State Forests gained dual Forest Certification from the Forest Stewardship Council (FSC) and Sustainable Forestry Initiative (SFI). Independent, third-party certification means management of Wisconsin's forests meets strict standards for ecological, social, and economic sustainability. In 2009, State Forests were re-certified under FSC and SFI. The State Forest program will continue to participate in forest certification. The status of certification corrective actions will be shared annually.

PUBLIC COMMUNICATIONS PLAN

The public and other governmental agencies will have the opportunity for on-going involvement in the implementation of this master plan. This communication plan describes how the public will be notified about activities and issues on the Black River State Forest.

Annually the State Forest Superintendent will write a report that summarizes the following:

- For the past year, the primary management and development activities that were completed and other significant issues that were addressed.
- For the coming year, outline any proposed management and development activities and any changing management actions or approaches.

The State Forest Superintendent will maintain a list of persons, groups, and governments interested in receiving the annual report. When requested, the State Forest Superintendent will provide the information via U.S. mail, e-mail or direct them to the Department's internet web site.

Annually, the Black River State Forest will hold a Stakeholders' meeting which is designed to update interested parties on state forest proposed activities.

In the event the Department considers a change to the master plan through a plan variance or amendment, the public will be advised of the proposal and informed of the review and comment process. As appropriate, a public news release will be prepared and stakeholders notified of the comment process.

TRIBAL CONSULTATION

The Black River State Forest Superintendent will consult annually with the Ho-Chunk Nation on state forest management issues. Additional consultation meetings with the Nation may be scheduled should issues warrant immediate attention.

CONTACT PERSON

The Black River State Forest Superintendent should be contacted regarding the master plan or other state forest related topics. At the time of this publication, the Black River State Forest Superintendent contact information is:

Peter Bakken
Black River State Forest Superintendent
WDNR Service Center
910 Hwy 54 E
Black River Falls, WI 54615
715-284-1406
peter.bakken@wisconsin.gov

PROPERTY DESCRIPTION

BACKGROUND AND AFFECTED ENVIRONMENT

PROPERTY DESCRIPTION

PROPERTY OVERVIEW

The Black River State Forest is located in central Wisconsin in the Eastern Broadleaf Forest Province which occupies the southern half of the state. The Black River State Forest was established in 1957 after the federal government conveyed 59,000 acres of forest land to the Wisconsin Conservation Department in 1955. Through further land purchases, the forest has grown to its present size of 68,237 acres. The original area within the Black River State Forest, which consisted primarily of white pine and red pine, was heavily logged between 1880 and 1895 and was later settled by homesteaders seeking farmland. Today the forest consists of a mix of jack pine, oak, and aspen with an increasing component of white pine in the understory and canopy. The state forest provides hunting for whitetail deer, Ruffed Grouse, Wild Turkey, waterfowl, bear, and a variety of small game. Fishing is also popular on the Black River, East Fork of the Black River and on various flowages found throughout the state forest. In addition, the property provides a breadth of recreational opportunities such as cross-country skiing, hiking, camping, horseback riding, and motorized trails.

PAST MANAGEMENT AND USE

During the late 1930s the Resettlement Administration, using Works Project Administration labor, began a project to develop a series of earthen dikes within the forest. This included setting up a small sawmill in the area where they produced and assembled oak sheet piling for the core of every earthen dike in the state forest area. This project changed the hydrology of the area by creating large shallow impoundments within the wetland complex of the state forest. Over 90% of the impoundments created during this time are still present on the state forest today.

A log shelter and home were built in 1938 by the Civilian Conservation Corps at the Castle Mound Roadside Park. A service building was added in 1958 and soon after a loop campground with toilets and an observation tower were built. By 1966, annual attendance at the Black River State Forest was 100,000. Today, over 300,000 visitors use the forest annually (WDNR 2004).

The arrival of snowmobiles brought a new type of recreation to the forest and in 1967 a 14 mile loop trail was constructed. Today there are nearly 48 miles of motorized trails that link with an extensive county trail network. With the advent of the ATV in the 1970s, this new recreational use was permitted on 33 miles of the existing snowmobile trail system. Today, ATVs have become one of the fastest growing recreation activities in Wisconsin and on the state forest.

The construction of Interstate 94 contributed to the development of Robinson Beach. The need for sand resulted in the digging of an 11 acre clear water pond in 1968.

When cross-country skiing became popular in the early 1970s, a 14 mile trail was developed. Another 10 miles were added in 1981. Today, the trails are also used for backpacking, hiking and mountain biking. The Black River State Forest also contains three nature trails, one located at each campground.

The area which now comprises the state forest was heavily logged during Wisconsin's cutover period from the mid-1800s through the early 1900s. White and red pine were the most heavily logged species. The cutover eventually led to a focus on forest conservation and the establishment of many state and national forests. Today, the area is much more heavily forested as a result of natural regeneration, tree planting, and fire suppression.

PHYSICAL ENVIRONMENT

Geology

The Black River State Forest landscape lies within an area that was strongly influenced by glaciations during the Ice Age. The Ice Age began about 2.5 million years ago, and was a time when glaciers repeatedly formed, expanded, and retreated. The most recent ice advance into this area occurred during the latter part of the Wisconsin Glaciation. Twenty-six thousand years ago, a large ice sheet expanded through Canada and moved into the Lake Superior and Lake Michigan basins. The ice reached its maximum southerly extent in Wisconsin about 18,000 years ago, and then gradually retreated back out of the Lake Superior basin about 9,500 years ago. The Wisconsin

Glaciation was responsible for creating many of the surface formations found in the vicinity of the BRSF, although the area was not in direct contact with the ice sheets, and prior glaciations are also thought to have influenced the surficial geology of the area.

Glacial Lake Wisconsin occupied a large area just to the east of the state forest between 14,000 and 19,000 years ago. During most of the time the lake existed, glacial meltwater drained through the lowland now occupied by the East Fork of the Black River, and through the Black River valley to the Mississippi River. Most of the former drainage channels have been obscured by deposits of post-glacial sediments, so their exact location is uncertain. Drainage through these channels built outwash terraces and fans, shaping the topography along the Black River and the East Fork.

Earlier glacial lakes, formed by glaciers that preceded the Wisconsin Glaciation, are believed to have built lake plains and other drainage features in the state forest area. The large sand plain that makes up most of the property, known as the Jackson Plain, may have been covered by one or more large glacial lakes prior to 130,000 years ago. Possible drainage outlets for these lakes are located in eastern Jackson County near Eleva Station.

After the Wisconsin Glaciation, and before vegetation covered the land, there was little to impede strong winds throughout the region. The sandy surfaces of the lake plains and outwash terraces were easily moved about, and many aeolian dune features were built by wind action. Also protruding above the sand plain are remnants of eroded Cambrian sandstone, forming buttes, hills, knolls, ridges, and pediments. Castle Mound and Wildcat Mound are examples of landscape features formed by Upper Cambrian sandstone.

Upper Cambrian sandstone is also exposed along the banks of the Black River and the East Fork of the Black River, outcropping as low ledges or cliffs. Precambrian-age igneous and metamorphic rock is exposed at rapids along these rivers upstream from Black River Falls; these are some of the southernmost exposures of Precambrian rocks in Wisconsin.

Soils

Upland soils on the Black River State Forest are primarily sands, sandy loams, and grayish brown unglaciated silt loams, derived from glacial lakebed and outwash deposits and erosion of sandstone bedrock. They are generally acidic, infertile, and prone to drought; the sands of this area are among the most sterile soils in the state. Extensive areas of organic soils (peats and mucks) are associated with the area's abundant wetlands. Terraces along the Black River include localized areas of silts and other fine-textured soils, but these make up a small part of the forest. Where the water table is close to the surface, small changes in elevation can result in a wide range of local soil moisture conditions.

The majority of soils found within the Black River State Forest belong to one of three soil associations that group soil series with similar properties. These associations are the Tarr-Boone-Rockdam Association, the Elm Lake-Fairchild Association, and the Iron Run-Ponycreek-Dawsil Association. All of these associations present unique suitability limitations for various uses based on slope, water holding capacity and texture as well as chemistry and engineering indices.

The Tarr-Boone-Rockdam Association is made up of moderately well to excessively drained sandy soils formed in siliceous sandy alluvium or siliceous residuum derived from sandstone. They are found on nearly level to very steep sites and have an available water holding capacity that is low to very low. These soils are generally better suited for pine tree growth as hardwood trees generally grow slowly and are of poor shape when on these soils. Restrictive soil features for recreational development are ranked as "severe" (on a scale of slight, moderate, or severe) for all soils within this association primarily due to the sandy and acidic nature of these soils. The nearly level to gently sloping areas are generally well suited for dwellings however, are poorly suited to septic tank absorption fields because they do not adequately filter the effluent.

The Elm Lake-Fairchild Association is made up of poorly drained and somewhat poorly drained sandy and mucky soils formed in siliceous sandy alluvium and loamy residuum derived from the underlining interbedded sandstone and shale. They are found on nearly level and gently sloping sites and have a low water holding capacity. The Elm Lake soils in this association are suited to conifers but are poorly suited to most other trees because of the wetness. The Fairchild soils of this association are suited to trees. Restrictive soil features for recreational development are ranked as "severe" for all soils within this association primarily due to wetness and the sandy acidic nature of these soils. This association is generally poorly suited to unsuited for septic tank absorption fields and dwellings mainly because of the wetness and the thin soil layer over bedrock.

The Iron Run-Ponycreek-Dawsil Association is made up of somewhat poorly drained to very poorly drained sandy, mucky, and peaty soils. The Iron Run and Pony Creek soils are formed in siliceous sandy alluvium and the Dawsil soils are formed in organic material overlaying siliceous sandy alluvium. They are found on nearly level and gently sloping sites with Iron Run and Pony Creek soils having available water holding capacity that is

TABLE 3.1 IMPOUNDMENTS LOCATED WITHIN THE BLACK RIVER STATE FOREST

Name	Description	Maximum Depth	Access
Battle Point Flowage	A very soft water drainage impoundment. The water has a medium brown color, is acid, and has a low transparency.	7 feet	There is public access from Battlepoint Road.
Black Duck Flowage	A soft water drainage impoundment. The water has a light brown color, is acid, and has a low transparency. It is not managed for fish. Mallards and wood ducks nest at the flowage.	7.5 feet	It is managed for waterfowl but there is public access by foot.
Dry Land Flowage	A drained lake having very soft water. It is acid and the water has a light brown color and a low transparency. It is managed for waterfowl. During dry weather periods the flowage has very little water area.	5 feet	It has unimproved access
Funmaker Flowage	A soft water drainage impoundment. The water has a light brown color, low transparency, and a neutral pH. Beaver, waterfowl, and big game frequent the flowage.	3 feet	It has an unimproved access. Gated approximately 400 yards prior to the flowage; however, access can be garnered by foot.
Little Bear Flowage	A soft water drainage impoundment located on Dickey Creek. The water has a medium brown color, is alkaline, and has a low transparency. The flowage is used in waterfowl management.	5 feet	There is unimproved access.
Big Bear Flowage	A very soft water drainage impoundment (7 acres) on Dickey Creek. The water is medium brown, slightly acidic, with low transparency. The flowage is managed for waterfowl.	6 feet	There is unimproved access.
Little Thunder Flowage	A drainage impoundment. The water is very soft, alkaline, has a dark brown color, and a low transparency. The flowage is managed for waterfowl.	3 feet	There is a graveled parking area.
Mallard Flowage	A drainage impoundment. The water is a very soft, slightly acid, medium brown color and a low transparency. The lake is managed for waterfowl.	4.5 feet	There is unimproved access.
Partridge Crop Flowage	A very soft water drainage impoundment located on a ditch. It has medium brown colored water, a low transparency, and it is slightly alkaline. The flowage is managed for waterfowl.	3.5 feet	There is access from a state trail.
Pigeon Creek Flowage	A soft water drainage impoundment located on Pigeon Creek. The water is alkaline, has a low transparency, and a medium brown color.	9 feet	There is a multiple use access which includes a boat launch, swimming, picnic area, and campground.
Seventeen Flowage	A very soft water drainage impoundment located on a ditch system within the forest. The water is alkaline, has a light brown color, and a low transparency.	4 feet	There is no public access to the flowage.
Squaw Mound Flowage	A soft water drainage impoundment. The water is alkaline and has a medium brown color. It is located on Levis Creek in the state forest.	6.5 feet	There is public access with parking. However, there is a gate prior to the waterway; must walk a short distance to access.
Staffon Lake Flowage	A soft water drainage impoundment located on Hay Creek within the state forest. The water is acidic, has a light brown color and low transparency.	1.2 feet	There is public access and parking.
Tanner Flowage	A soft water drained impoundment with a low transparency, and medium brown color.	6.5 feet	There is unimproved access.
Teal Flowage	A very soft water, light brown colored drainage impoundment located on Dickey Creek. The water is alkaline and has a low transparency. One of the few impoundments that has provided satisfactory fishing and has not had a history of winterkill conditions. The flowage was deepened in 2006 and improvements to the fishery habitat were made. A handicapped pier and boat launch were constructed and the parking lot was improved.	10 feet	There is public access, handicap access, and a picnic site.
Townline Flowage	A soft water drainage impoundment located on two unnamed streams and Hay Creek. The water is alkaline, has a medium brown color, and a low transparency.	6.5 feet	There is public access from State Highway 54.
Weber Flowage	A very soft water drainage impoundment located on a ditch system. The water has a low transparency, is alkaline and has a light brown color.	3.5 feet	There is unimproved access.
Whitetail Flowage	A soft water drainage impoundment with light brown water and is alkaline. It is located on an unnamed stream.	8 feet	There is public access and an unimproved boat launch.
Wildcat Flowage	An artificial seepage lake. Water color is light brown and slightly acid. It has a low transparency.	3 feet	There is unimproved access and a picnic area.
Wilson Marsh Flowages	A soft water drained impoundment that has medium brown colored water, is acid, and has low transparency. It is located at the upper end of Dickey Creek.	8.5 feet	There is unimproved access.

low and the Dawsil soils having an available water holding capacity that is very high. The Iron Run soils are suited to trees, the Dawsil soils are generally unsuited to trees, and the Pony Creek soils are suited to conifers but are poorly suited for most other trees. Restrictive soil features for recreational development are ranked as "severe" for all soils within this association primarily due to humus, wetness and the sandy acidic nature of these soils. All soils in this association are unsuited to poorly suited for septic tank absorption fields and dwellings mainly because of wetness (Soil Survey of Jackson County, 2001).

Topography

The topography of the Black River State Forest is generally a flat to slightly rolling landscape. There are a few areas on the property, such as Castle Mound and Overmeyer Hills, which have more significant topographical relief.

WATER RESOURCES AND AQUATIC HABITATS

Lakes

There are very few natural lakes within the state forest, and these are mostly of the oxbow type-abandoned channels within the floodplains of the major rivers that contain water permanently or seasonally. Most standing water in the Black River State Forest is man-made impoundments and flowages constructed by the damming of small streams. Like the streams they impound, they are generally shallow, acidic, and infertile (WDNR, 1968). Table 3.1 is a summary of these impoundments.

Wetlands

The water table is generally close to the surface and small changes in surface topography may result in a wide range of soil moisture levels. The landscape is generally flat with sterile soils. The proximity to groundwater in large portions of the study area has resulted in large areas of wetlands or wetland complexes dominated by monotypic sedge/sphagnum vegetation. The peat in most wetlands is shallow underlain by sand.

Streams

The major drainages in the region include the Black River on the west and the East Fork of the Black River including streams in the Morrison Creek, Halls Creek and East Fork Black River watersheds. All the streams are characterized by stained water color caused by the organic (tannic) acids originating from the large wetland complexes within the watershed. Although historical stocking of trout was common, all of the streams within the boundary of the state forest are naturally populated with warm water forage and sport fish. Although the Black River can have fairly high nutrient levels, the smaller streams draining through the Black River State Forest are relatively low in nutrients and do not experience eutrophication problems. The tributaries to the Black River, East Fork of the Black River, and Robinson Creek are mostly high gradient streams. Other significant streams include Halls Creek, Hay Creek, Morrison Creek, Pigeon Creek and Perry Creek. The forest has a range of stream sizes from 1st order headwaters to the Black River which is a 6th order stream with an average flow of 290 cubic feet per second (cfs). Many of the small tributaries of the Black River have been dammed to create flowages used for cranberry production and wildlife habitat. The largest concentration of flowages occurs in the Dike 17 Wildlife Area, where the goal is waterfowl management. Surface water in the area originates in wetlands with significant peat deposits. There is very little groundwater input to most of the streams.

The Black River is a fast, large, warm, soft water stream. Approximately 12 miles are within the Black River State Forest. The species diversity is high and the river contains about 200 species of macroinvertebrates including one endangered, two

TABLE 3.2 FISH SPECIES IN THE EAST FORK OF THE BLACK RIVER

American Brook Lamprey	Common Shiner	Shorthead Redhorse
Banded Darter	Glass Pickerel	Smallmouth Bass
Black Crappie	Johnny Darter	Walleye
Blackside Darter	Largemouth Bass	White Sucker
Bluegill	Northern Hog Sucker	Yellow Bullhead
Central Mudminnow	Northern Pike	Yellow Perch
Common Carp	Rock Bass	

Source: Helsel, 2006

threatened, and 18 special concern species. Also present is the state threatened wood turtle, although the populations have decreased since 1994.

The East Fork of the Black River is a medium sized (5th order) warm, fast, brown-water stream with very soft water that approximately parallels the north edge of the study area. The East Fork Black River is nearly 60 miles long and flows through Clark, Wood, and Jackson counties. The river can sustain a sport fishery from its mouth to the village of City Point. During wet years, the sport fishery may extend upstream of City Point. The river flows largely through forested lands and receives flow from many tributaries which originate in wetlands. The East Fork of the Black River delivers very little sediment to Lake Arbutus as seen on aerial photos taken shortly after rain events. The bottom is mostly sand with rubble, bedrock, and silt also present. Approximately 3.3 miles of the East Fork of the Black River are within the forest. Water quality information from 1992, 1993 and 1997 indicate relatively low nutrients (total phosphorus = 0.058 mg/L, organic nitrogen = 0.86 mg/L) with slightly acidic conditions (pH = 6.69) with low buffering capability (alkalinity = 9.35 mg/L).

Macroinvertebrate index of biological integrity (IBI) rating from 1992 to 1996 generally reflect good stream conditions ranging between 4.00 (good) and 9.33 (excellent). Fisheries surveys in 2004 found 20 species (Table 3.2) as part of scheduled baseline sampling. The fisheries community is characteristic of a warm water sport fishery and provides plenty of angling opportunities.

The area of the river along the East Fork Campground has the best density of freshwater mussels in the stream and good diversity with eight species (three special concern). Also found in the stream are a series of open and partially wooded seeps which harbor two special concern beetle species.

Robinson Creek is a medium sized stream with light brown, cool water. Just over five miles of the stream are located in the forest. The stream originates as an unnamed flowage from about 12 headwater streams coming out of a portion of the Overmeyer Hills between Warrens and Millston. The portion named Robinson Creek originates in the Starlight Wetlands complex and the first few miles have cranberry flowages as tributaries. The creek has a high diversity of aquatic invertebrate species (60 taxa) plus 32 fish species. Several of the species are considered rare including two dragonflies, one damselfly, one stonefly, and one predaceous diving beetle. The macroinvertebrate index of biological integrity is rated fair based upon sampling in 2001. The stream is also the main drainage for the southern part of the forest. Robinson Creek Pines State Natural Area protects about one half mile of stream frontage. Baseline monitoring surveys in 2001 documented a fisheries community characteristic of a cold water stream including both brook and brown trout. Other species found in Robinson Creek include: American brook lamprey, blacknose dace, bluegill, brook stickleback, central mudminnow, creek chub, Johnny darter, largemouth bass, pearl dace, and white sucker.

Halls Creek is a small to moderate size (5th order) light brown stream that originates in the Western Coulee and Ridges Ecological Landscape and is a tributary to the Black River. Approximately 0.75 miles are in the forest. The stream contains ninety species of aquatic invertebrates and 28 fish species (none with special status). A baseline survey of Halls Creek in 1999 found seven different species dominated by American brook lamprey and brown trout. Other species include brook stickleback, brown trout, central mudminnow, Johnny darter, and white sucker. The macroinvertebrates collected in 1992 rate the biological integrity of the stream as good. No water quality information is available from Halls Creek. The eight species of mussels are high for a stream of its size.

Hay Creek is a small creek that originates in open wetlands in the Central Sands. Approximately 4.8 miles runs through the forest. Water quality information from 1992, 1993 and 1997 indicate relatively acidic conditions (pH = 6.11) with low buffering capacity (alkalinity = 3.78 mg/L) and is reflective of the large proportion of wetlands in the watershed. Hay Creek is relatively infertile with low nutrient levels (total phosphorus = 0.017 mg/L, organic nitrogen = 0.39 mg/L). The fishery is characteristic of an infertile, cold water system with a relatively small number of species found in 2004, including American brook lamprey, blacknose dace, blackside darter, brook trout, central mudminnow, creek chub, hornyhead chub and white sucker.

Some of the invertebrates found in the lower section are also indicative of cold water. The macroinvertebrate index of biological integrity for Hay Creek was generally good with ratings from 4.19 (fair) to 9.17 (excellent) over a period of time from 1992 to 2004. The lowermost portion of the creek is 2nd order in size and is somewhat entrenched with small seeps exposed along the banks. Ninety species of aquatic invertebrates and seven fish (none with special status) have been recorded but one species is considered globally rare.

Morrison Creek is a medium sized (5th order) brown-water stream. Approximately 15.8 miles are in the Black River State Forest. Morrison Creek begins in the far eastern portion of this watershed and flows west, through Potter's Flowage, the Black River State Forest and the Ho-Chunk Nation lands, before entering the Black River, 30 miles later. The lower eight

miles of Morrison Creek contain sport fish. A warmwater forage fishery inhabits the remaining 22 miles of the creek. There are several impoundments on the forest in the Dike 17 wildlife area. The last 24 miles of Morrison Creek are not impounded. Above Oxbow Ponds there is an uncommon softwater spring that emerges near the bank and flows a few feet into Morrison Creek. The stream has a high macroinvertebrate diversity (41 species) and composition for a stream of its size. The macroinvertebrate index of biological integrity for Morrison Creek collected in 1992 an 2004 were classified as fair and good respectively. Four macrovinertebrate species are special concern, and two are globally rare. In addition some 21 fish species (none with special status) are found in the creek. No mussel species were found, probably because the water temperature is too low on average. A wide range of aquatic habitats are found including oxbows, floodplain wetlands, seeps, and at least one softwater spring and spring run.

Pigeon Creek has very soft, medium brown colored water and flows in a generally westerly direction. Sand is the most common bottom type with silt and gravel present. The stream is classified as a type two brook trout stream.

Perry Creek originates in the Central Poor Fens and is approximately 2.8 miles long. The entire creek is in the forest. The water is cold and light brown. Sand and muck are predominant substrates in the upper section changing to shallow sand and gravel or sandstone bedrock downstream. There is a high diversity of aquatic invertebrates (39 species) for a cool water system plus at least six fish species (none with special status). Above the flowages the tributary streams are considered trout waters. Included in the tributary is a stretch of wet sandstone cliffs, which support a number of very rare aquatic insects. These rare taxa include two species of water scavenger beetles (one species is a hybrid previously known from only one site in Wisconsin) and a state record caddisfly. This caddisfly is the first record of this species in 57 years, and represents one of only three sites known anywhere.

Dickey Creek is a small, warm water stream that originates in open wetlands of the Black River State Forest within the Dike 17 Wildlife Area. The stream is stained by organic acids that are produced as shallow ground water percolates through the large amount of wetlands in the watershed. This stream flows in a northwesterly direction for approximately eight miles before discharging into Morrison Creek just above its

confluence with the Black River. Five dams are located on this stream from its headwaters downstream approximately 3.5 miles. The predominant bottom type is shifting sand with sparse gravel which limits the diversity of aquatic invertebrate species. The substrate and low gradient water flows also limit its potential as a warm water sport fishery. There are 19 acres of adjoining wetland to Dickey Creek and 12.8 miles of public frontage.

Only a small portion of Levis Creek is located in the Black River State Forest and originates in an extensive wetland on the property. Ditches constructed decades ago to drain the wetland persist. Squaw Mound Flowage is a 14 acre impoundment located on the upper end of Levis Creek. Further downstream, beyond the boundary of the Black River State Forest, the stream is managed as a class I trout stream from its junction with Indian Grave Creek to the Black River. Upstream of Indian Grave Creek, forage fish inhabit the stream. Macrovertebrates samples collected in 1991 and 2003 from the lower portion of Levis Creek indicate a good quality stream. Although deeply stained by organic (tannic) acids, water quality samples collected in 2003 indicate relatively low nutrient levels.

Valentine Creek flows through the Black River State Forest and the Ho-Chunk Nation lands. Valentine Creek is designated as a three mile long Class I trout stream, and is a tributary to Morrison Creek near its confluence with the Black River; however, recent fish surveys have found only limited number of trout and very poor to fair rated cold water fish index of biological integrity.

Use Limitations and Opportunities

The water in the streams is alkaline water with low transparency. Clear Creek, Indian (Valentine) Creek, Creek 18-10, and Beltz Creek are small creeks within the forest boundaries designated as Class I brook trout streams. The forest contains three seepage lakes and 16 seepage and stream impoundments. Because many of the flowages are subject to annual or frequent winterkills and are drawn down in summer to be regenerated for waterfowl food, they do not lend themselves to fish management. Battle Point, Whitetail, Townline, and Teal flowages provide limited fishery for largemouth bass, northern pike, and panfish species. The ponds at Oxbow, constructed in 1967, have been managed as "put and take" trout waters. The ponds are stocked annually with brook and rainbow trout.

The Black River State Forest also contains a number of dams. The dams were created in the 1930s by the Resettlement Administration. The dams created large shallow impoundments within the wetland areas of the forest. Over 90% of the impoundments created during the 1930s are still present on the forest today. The dams on the state forest are listed in Table 3.3.

TABLE 3.3 DAMS IN THE BLACK RIVER STATE FOREST

Official Name of Dam	Popular Name of Dam
Big Bear Flowage/Little Bear Flowage	
Black River Camp	
Koranda Flowage	
Lower Wilson Flowage/Upper Wilson Flowage	
No Name Flowage	
Resettlement Administration 1	Little Thunder Flowage
Resettlement Administration 2	Battlepoint Flowage
Resettlement Administration 3	Wilson Marsh Flowage
Resettlement Administration	Weber Flowage
Resettlement Administration 5	Mallard Flowage
Resettlement Administration 6	Tanner Flowage
Resettlement Administration 7	Sharptail Flowage
Resettlement Administration 8C	Townline Center
Resettlement Administration 8E	Townline East
Resettlement Administration 8W	Townline West
Resettlement Administration 12	East Seventeen Flowage
Lower Seventeen Flowage	
Resettlement Administration 13	Partridge Crop Flowage
Resettlement Administration 14	Black Duck Flowage
Resettlement Administration 15	Whitetail Flowage
Resettlement Administration 16	Wildcat Flowage
Resettlement Administration 17	West Seventeen Flowage
Resettlement Administration 19	Staffon School Flowage
Resettlement Administration 20	Squaw Mound Flowage
Resettlement Administration 21	Little Bear Flowage
Resettlement Administration 23	Pigeon Creek Flowage
Resettlement Administration 24	
Resettlement Administration 25	Funmaker Flowage
Resettlement Administration 26	
Resettlement Administration 27	
Resettlement Administration 28	
Resettlement Administration 29	Teal Flowage
Resettlement Administration 29C	
Resettlement Administration 29D	
Resettlement Administration 32	
Resettlement Administration 34	Dryland Flowage
Resettlement Administration 51	

Source: DNR 2006

UPLAND AND LOWLAND VEGETATION AND NATURAL COMMUNITIES OR HABITATS

A variety of tools are available to land managers engaged in forest planning and management. Using multiple sources of data, managers are better able to assess site capabilities, identify ecological and silvicultural alternatives, predict the effectiveness of possible silvicultural treatments, evaluate feasible management alternatives, and choose appropriate management objectives. These tools are an integral part of the master planning process and are used for sound forest management. A description of each source is provided below:

- The General Land Office's Public Land Survey data (GLO PLS) is utilized to assess historic vegetation. These surveys conducted between the 1830s and 1870s, divided the state into 6 by 6 mile townships and 1 by 1 mile sections so that the land could be homesteaded. In order to mark the corners of each section, the surveyors blazed up to 4 witness trees around the corner, and noted tree species, diameter, and distance and direction from the corner post. While the intent of these surveys was not ecological in nature, it does provide researchers with some ecological data about species composition and tree density at the time of the surveys.
- WISCLAND land use/land cover data is a source of generalized information on vegetation. These data were developed by the DNR with support from a consortium of other users. The data are an interpretation of the state's land cover from LANDSAT satellite images taken in 1992. This vegetation classification provides non-detailed information on several categories of forested and non-forested land.
- Wisconsin DNR forest reconnaissance provides data at the stand level such as current composition, but does not provide data on successional trends.
- Forest Inventory and Analysis (FIA) data are primarily used to assess the timber resource. The FIA uses statistical sampling at selected plots. These are the most accurate data for showing amounts (acreage and volume) of different forest types at the county level or a larger area. The data are not presented spatially, although information from sample points has occasionally been extrapolated to produce forest type maps.
- The Forest Habitat Type Classification System (FHTCS)[1]. The FHTCS identifies potential climax associations based on repeating patterns in the composition of the understory vegetation and different understory species. Individual forest cover types usually encompass a wide range of environmental conditions and do not accurately reflect site potential or respond predictably to given management techniques.
- Natural Heritage Inventory (NHI)[2] The NHI programs focus on rare plant and animal species, natural communities, and other natural features. The Wisconsin NHI Working List is the official list of endangered, threatened, and special concern plants and animals for Wisconsin. The Working List also includes a list of natural communities known to occur in Wisconsin. The list changes over time as the populations of species change, and as knowledge about species status and distribution increases.

Historic Vegetation

The Public Land Surveys (PLS) of the mid 1800s portray a landscape composed of extensive pine and oak forests on the uplands, and numerous tamarack swamps in the county. Concentrations of white pine or red pine dominated forests were noted south and east of Black River Falls, along the Black River and several tributaries (East Fork and Morrison Creek). The Overmeyer Hill-Wildcat Mound area contained black oak (Quercus velutina), white oak (Quercus alba), and red oak (Quercus rubra) forests. Mixed forests dominated by pines also contained some oaks. There was an abundance of forested lowlands dominated by tamarack and black spruce in the county.

The forest was heavily logged during Wisconsin's cutover period which started in the mid-1800s and lasted through the early 1900s. The logging activities peaked in the late 1800s with white pine and red pine the most heavily exploited species. Fires, due to logging activities, increased during the cutover. The cutover of the forests did not go unnoticed and led to a focus on forest conservation and the establishment of state and national forests.

Current Vegetation and Natural Communities

Today the area is much more heavily forested as a result of natural regeneration, tree planting, and fire suppression actions (Figure 3.1). The eco-region that includes the Black River State Forest has higher acreages of jack pine, red pine, and mixed conifer-hardwood forests than surrounding eco-regions. Several non-forested cover types are also well-represented in the forest, for example, wet meadows and lowland shrub cover types. Upland cover types include white pine, jack pine, oak with red pine, aspen (trembling and bigtooth), and paper birch is also common (WISCLAND data, WDNR 1999). Red maple is found but not dominant. The forest is mostly young and medium-aged. Stands exceeding 100 years of age are uncommon.

1 See A Guide to Forest Communities and Habitat Types of Northern Wisconsin (2002) by Kotar.

2 The most recent NHI information for Wisconsin is available at (www.dnr.state.wi.us/org/land/er/).

The Black River State Forest contains a variety of forest communities that differ in composition and structure depending on site-specific factors like soil type, soil moisture and nutrient levels, landform, disturbance regime, and historical events. Although oak and aspen are important timber types in the forest, pines dominate in this landscape. When the state forest was established in 1957, the jack pine timber type surpassed all pines representing more than 33% of the forest cover while white pine, the most indigenous species, consisted of only 6% of the acreage. Associated with upland sites from dry to dry-mesic, jack pine was also found extensively on a range of moist to wet forest conditions. The combination of a burned over landscape, the abandonment of farming, and fire suppression in the 1930s, favored the widespread establishment of jack pine.

Second growth white pine following the logging era of the 1880-90s was mostly relegated to moist sites (stream terraces) and wet areas (swamps) that allowed them to survive wildfires of the settlement period (1900-1930s). These remnant pockets have been the primary seed source for white pine to regain prominence. Today, white pine is 19% of the property's acreage and now surpasses jack pine acreage. Throughout the 50 years of the Black River State Forest's establishment, oak, aspen, and red pine acreage percentages have remained fairly constant.

Tree planting began before the property was officially designated a state forest. The first eight plantations were established in the fall of 1936 totaling 292 acres; all but one was a mix of jack, white, and red pine. The remaining plantation was entirely white pine. By 1940 the Farm Security Administration had planted 4,232 acres mostly on abandoned crop fields and some sparse, wooded pasture. From that beginning to 1957 a total of 5,674 acres were planted; the majority red pine, followed by jack pine, and white pine. The jack pine plantation acres have been harvested and are now mostly natural stands of mixed species.

Tree planting has continued on the state forest since its establishment in 1957. The first 25 years concentrated on restoring open lands such as crop fields and old pastures to forest cover, primarily red pine plantations. By the mid 1970s most of the open lands were planted and annual planting tapered off. In 1977, two large forest fires burned nearly 30,000 acres which included nine red pine plantations. Those red pine plantations were replanted by 1979.

In the early 1990s, a jack pine budworm outbreak occurred. Salvage harvests followed with approximately 4,000 acres being harvested. Of these acres 3,000 acres naturally regenerated resulting in mixed stands of jack pine, white pine, oak, and some red maple and aspen. Tree planting on the remaining 1,000 acres focused primarily on jack pine with attempts to establish red pine at some locations. These attempts resulted in the establishment of approximately 200 acres of red pine plantations. The Braacke scarifier or a commercial trencher was used on many areas for site preparation. Some herbicide application was used for site preparation or follow-up competition control after tree planting. Success of these plantings ranged from good to poor depending on soil moisture for each site.

Planting on the state forest continues today focusing on supplemental planting to augment natural regeneration. Annual planting varies from 100 to 350 acres with the average being 200 acres. Jack pine is the primary species planted. Previously,

FIGURE 3.1 CURRENT COVER TYPES IN THE BLACK RIVER STATE FOREST

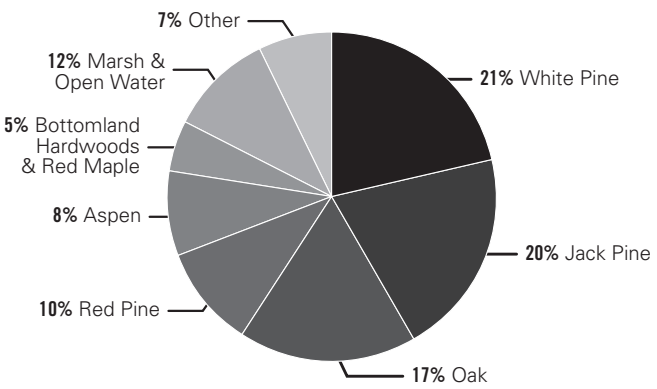


TABLE 3.4 BLACK RIVER STATE FOREST TIMBER SALE STATISTICS, 2003 - 2007

Calendar Year	Acres Harvested	Total Cord Equivalents Harvested	Total $ Value
2003	1,588	20,781	$795,490
2004	944	10,237	$408,487
2005	1,152	19,127	$595,499
2006	1,189	15,703	$579,763
2007	730	9,221	$394,812
5 Year Average	**1,121**	**15,014**	**$554,810**

hand and/or machine planting were the method of choice. However, the most recent trend has focused on direct seeding of jack pine which tentatively appears to be the most economically viable method of regeneration.

Timber harvesting on the Black River State Forest is implemented using sustainable forestry practices as outlined in the DNR Silviculture and Forest Aesthetics Handbook. On average over the past five years, approximately 15,000 cord equivalents were harvested annually, generating annual receipts of approximately $550,000 (Table 3.4). From 2003 to 2007, timber harvesting accounted for approximately 85% of the total average annual BRSF revenue. Timber products harvested from the Black River State Forest support primary and secondary wood using industries throughout the region, as well as stimulate the local economy.

The Black River State Forest, in conjunction with all state forests in Wisconsin, conforms to the rigorous principles and criteria for sound management requirements of forest certification through both Forest Stewardship Council (FSC) and Sustainable Forest Initiative (SFI) assessments. The Wisconsin Natural Resources Board approved forest certification programs at its April 28, 2004 meeting.

Currently, pine species dominate the Black River State Forest. This includes white, jack, and red pine. Oak and aspen are also important forest types present. Other species include those adapted to the lowland and swamp conditions on much of the forest, such as swamp/bottomland hardwoods, tamarack and black spruce. As the master plan is implemented, aspen is predicted to stay relatively stable, jack pine is expected to decrease slightly, and a small decline in oak is predicted. Red maple and white pine are expected to increase considerably.

Dry Forests
Dry forests of oak, pine, or of mixed composition are extensive throughout the property. Most have been intensively managed, and some have been established as pine plantations on former farm fields. The greatest extent of relatively intact dry forest occurs on the sandstone ridges and mounds in the southeastern part of the forest in the Overmeyer Hills area, where black and/or northern pin oak are often co-dominant with white oak and all three native pines. Aspen, black cherry, and red maple are typical associates. White pine is an important dry forest understory species at many locations. Sites with jack pine and oak are typically managed via even aged management utilizing clearcut prescriptions. Some of these sites contain wild lupine and the associated Karner blue butterfly, both of which benefit from carefully planned clearcuts utilizing a shifting mosaic technique.

Dry-Mesic Forests
Dry mesic forests, composed of white and red pines and often mixed with oaks, are represented by significant occurrences on the slopes and higher terraces along the Black River and several tributaries (including the East Fork of the Black, and Hall's, Morrison, Dickey, Valentine, Perry, and Robinson Creeks). In hardwood stands, dominants include white and red oaks and a different association of understory plants than is characteristic of the drier forests or those heavily dominated by conifers. Some clearcuts have occurred in these areas however, many of these areas have received little forest management due to slopes or limited accessibility. Dry-mesic forests are sometimes associated with saddles and coves on dry sandstone ridge systems, especially where slope aspect is to the north or east or where soils are somewhat richer, deeper, and soil moisture is higher. These areas have received some even aged management via clearcuts primarily to release the white pine understory.

Mesic Forests
Mesic forests are rare within the state forest. The best developed stands of Southern Mesic Forest are on higher terraces along the Black River, where they occur within a mosaic of floodplain forest on the lower terraces and dry-mesic mixed forests of white pine, red pine, red oak, and white oak on the adjoining slopes. Harvest of elm occurred in some areas during the onset of Dutch Elm disease which resulted in regeneration of ash and maple in the gaps produced from this harvest, however, due to the limited extent and accessibility of this type, very little harvest has occurred.

Wet-Mesic Forests
Wet-mesic forests are best represented by mixed stands of white pine, red maple and jack pine. Springs are characteristic in this forest type which is subject to serious rutting, soil compaction, and is vulnerable to infestation by the exotic shrub, glossy buckthorn. Accessibility to these sites is very limited, however, some thinning has occurred when conditions allowed access in the white pine/red maple types and some even aged management via clearcuts has occurred in the jack pine/oak/red maple types.

Floodplain Forest
Floodplain forests are found within the state forest primarily along the Black River. This forest type includes silver maple, river birch, green ash, hackberry, and cottonwood. Harvest of elm occurred in some areas during the onset of Dutch Elm disease which resulted in regeneration of ash and maple in the gaps produced from this harvest.

TABLE 3.5 PLANTS WITH THEIR LARGEST STATE POPULATIONS IN THE REGION

Scientific Name	Common Name	Status in Wisconsin
Viola fimbriatula	Sand Violet	endangered
Asclepias ovalifolia	Dwarf Milkweed	threatened
Bartonia paniculata	Twining Screwstem	special concern
Bartonia virginica	Yellow Screwstem	special concern
Carex cumulata	Clustered Sedge	special concern
Carex folliculata	Long Sedge	special concern
Carex straminea	Straw Sedge	special concern
Juncus marginatus	Grassleaf Rush	special concern
Polygala cruciata	Crossleaf Milkwort	special concern
Potamogeton diversifolius	Water-thread Pondweed	special concern
Thelypteris simulata	Bog Fern	special concern

Source: NHI 2005

Conifer Swamps

Conifer swamps of tamarack and black spruce are uncommon and localized within the state forest. Some tamarack harvest occurred prior to and during the mid 1980s for utilization in the tobacco drying industry.

Rare Vascular Plants in the Region

The Wisconsin NHI database tracks 47 rare plant species in the Black River State Forest and surrounding Meadow Valley landscape. In the last 30 years three Wisconsin endangered plant species (reticulated nutrush (Scleria reticularis), sand violet (Viola fimbriatula), and beak grass (Diarrhena obovata) and five Wisconsin threatened plant species dwarf milkweed (Asclepias ovalifolia), bog bluegrass (Poa paludigena), pale green orchid (Plantanthera flava var. herbiola), prairie parsley (Polytaenia nuttallii) and algae-like pondweed (Potamogeton confervoides)) have been confirmed in the region. Table 3.5 lists plants that have their largest state populations in the Natural Heritage Inventory (2005) survey area, which includes the Black River State Forest.

Unique Habitats and Features

The Western Sands region identified in the Biotic Inventory (NHI, 2005), which includes the Black River State Forest, constitutes a large part of one of Wisconsin's most intact and distinctive landscapes. The characteristics described below are important considerations for state property master planning. They are not listed in order of importance.

- Large Areas of Natural Vegetation
- Extensive Public Lands
- Restoration Potential
- Landscape-scale Management
- Unique Ecological and Geological Attributes
- High Species Richness
- Natural Communities
- Exceptional Habitat Management Opportunities
- River Corridors

WILDLIFE RESOURCES

Wildlife in the forest is diverse and provides a habitat for many species that require large, contiguous tracts of land. The species composition depends on cover type and successional stage of the forest. Aspen and oak forests are important for white-tailed deer, Ruffed Grouse, snowshoe hare, Woodcock, black bear, beaver, as well as numerous species of small mammals and birds. Oak forests provides acorns as a food source and cover and browse for squirrels, deer, mice, raccoons, black bear, Bluejays, and Wild Turkeys.

Jack pine stands are used by many species that utilize early successional stages of forest growth. A high density of trees in young jack pine stands is beneficial to birds and mammals for nesting sites, cover and resting areas. Deer frequently browse young pines. Jack pine stands are also home to Kirtland's Warbler which is a recent rare occurrence on the forest.

Savannas and prairies are important to a number of ground-nesting species such as mallards, Woodcock, Sharp-tailed Grouse, cottontail rabbits, mice, songbirds, and reptiles. Wetlands, rivers, streams, and flowages provide habitat for aquatic and semi-aquatic species. Amphibians, shorebirds, reptiles, waterfowl, fish as well as some species of furbearing mammals require aquatic habitat. Many upland species use the wet areas of the forest for feeding and drinking. The large open areas in marshes are utilized by Sharp-tailed Grouse. Flowages and streams in the forest contain limited gamefish species such as muskellunge, northern pike, largemouth bass, smallmouth bass, walleye, panfish, bullheads, catfish, yellow perch, and brook, brown, and rainbow trout.

Several wildlife species, including Bald Eagles, wolves, bears, deer, Turkey, and Sandhill Cranes, have increasing populations

on the property while other species, such as waterfowl and Sharp-tailed Grouse, are declining in number. Some species, such as the whooping crane, were previously not known to be on the state forest, but are currently found here. Elk are currently not on the forest but areas provide suitable habitat and as a result are being considered for elk reintroduction.

In 1989 the Black River State Forest released wild turkeys. The first spring hunt was conducted in 1992, followed by a fall hunt in 1994. Since their introduction, the turkey population has increased dramatically. From 1995 to 2003 the number of turkeys harvested increased from 382 to 686 in the spring and from 130 to 227 in the fall.

Threatened, Endangered, Special Concern Species and Habitats

Rare Animals in the Region

The Wisconsin NHI database tracks 119 species of rare animals and two miscellaneous elements that the Biotic Inventory and Analysis of the Black River State Forest/Meadow Valley Landscape recorded in the area (2005). The rare animals include five mammals, 25 birds, 13 reptiles and amphibians, seven fish, 31 terrestrial invertebrates, and 38 aquatic invertebrates.

State Endangered or Threatened Animals

There are 27 animals listed as endangered or threatened in the region. Species that have experienced the greatest reduction in numbers over the last twenty years are the wood turtle and massasauga rattlesnake. Wood turtle population declines have been noted in the past 10 years in the Black River below Black River Falls. One cause may be illegal harvest (NHI 2005). The eastern massasauga rattlesnake population drastically declined in the 1980s and is now rare in the study area and throughout its entire range. Table 3.6 lists the 27 state endangered or threatened animals and their current status as documented in the Natural Heritage Inventory (2005) survey area, which includes the Black River State Forest.

Federal Endangered or Threatened Animals

Federally threatened and endangered species in the region are listed in Table 3.6. Kirtland's Warbler is one of the rarest birds in North America and although it has not been documented breeding on the Black River State Forest, there are records of singing males here and in the surrounding landscape. In addition, there are recent breeding records for Kirtland's Warbler in other portions of the Central Sands with habitats similar to some areas on the BRSF. The Kirtland's Warbler on the federal threatened and endangered resources list is noted as accidental. Bald eagles are proposed for delisting because of population recovery in Wisconsin. Karner blue butterflies have their largest global population in the study area and are managed under a formal Habitat Conservation Plan (WDNR 2000). The eastern massasauga rattlesnake is a candidate for federal listing and there are attempts to protect existing sites in order to prevent federal listing. The timber (gray) wolf is also relatively new to the study area. The region provides a unique niche in that it is the only suitable wolf habitat in central

TABLE 3.6 WISCONSIN ENDANGERED OR THREATENED ANIMALS FOUND IN THE BLACK RIVER REGION

Scientific Name	Common Name	State Status
Acris crepitans blanchardi	Blanchard's Cricket Frog	endangered
Cyclonaias tuberculata	Purple Wartyback	endangered
Cygnus buccinator	Trumpeter Swan	endangered
Lanius ludovicianus	Loggerhead Shrike	endangered
Nicrophorus americanus	American Burying Beetle	endangered
Ophisaurus attenuatus	Western Slender Glass Lizard	endangered
Podiceps grisegena	Red-necked Grebe	endangered
Schinia Indiana	Phlox Moth	endangered
Sistrurus catenatus catenatus	Eastern Massasauga Rattlesnake	endangered
Somatochlora incurvata	Warpaint Emerald	endangered
Thamnophis proximus	Western Ribbon Snake	endangered
Tyto alba	Barn Owl	endangered
Ammodramus henslowii	Henslow's Sparrow	threatened
Buteo lineatus	Red-shouldered Hawk	threatened
Callophrys irus	Frosted Elfin	threatened
Clemmys insculpta	Wood Turtle	threatened
Dendroica cerulea	Cerulean Warbler	threatened
Empidonax virescens	Acadian Flycatcher	threatened
Emydoidea blandingii	Blanding's Turtle	threatened
Lythrurus umbratilis	Redfin Shiner	threatened
Moxostoma Carinatum	River Redhorse	threatened
Nyctanassa violacea	Yellow-crowned Night-heron	threatened
Oporornis formosus	Kentucky Warbler	threatened
Pandion haliaetus	Osprey	threatened
Percina evides	Gilt Darter	threatened
Polyamia dilata	Net-veined Leafhopper	threatened
Tritogonia verrucosa	Buckhorn	threatened

Source: NHI 2005

Wisconsin and is separate from habitat in northern Wisconsin. The state forest falls into Wisconsin Wolf Management Zone 2 which is thought to be capable of sustaining 20-40 wolves. There were between 35-38 wolves reported in Management Zone 2 in 2002. The current population of wolves meets the recovery goals and the species has been delisted from a state threatened to a protected species (NHI 2005). The current list of federal threatened and endangered animals found in or near the state forest according to the Natural Heritage Inventory survey area is shown in Table 3.7.

Wildlife Species of Greatest Conservation Need

The Central Sand Plains Ecological Landscape and associated natural communities provide regionally significant habitats for many important native species with low or declining populations. These species are also known as Species of Greatest Conservation Need. These are wildlife species identified in Wisconsin's Wildlife Action Plan (WDNR 2005) that are most at risk of no longer being a viable part of Wisconsin's fauna and are in need of management to prevent them from being endangered or threatened at the federal level. While some of these species are currently state listed, many of them are not and some are game species. Appendix C lists priority Vertebrate Species of Greatest Conservation Need (SGCN) and their natural community associations that could benefit from management within the Central Sand Plains Ecological Landscape. That is, those high priority situations where all of the following are true: a) there is a high or moderate probability that the SGCN occurs in manageable numbers in the ecological landscape, b) the SGCN is significantly or moderately associated with the natural community, and c) the ecological landscape represents a major opportunity to manage or sustain that natural community. Wisconsin's Wildlife Action Plan provides the details on management for species and its habitats.

TABLE 3.7 FEDERAL ENDANGERED OR THREATENED ANIMALS IN THE BLACK RIVER REGION

Scientific Name	Common Name	Federal Status in Wisconsin
Dendroica kirtlandii	Kirtland's Warbler	Listed endangered, accidental
Haliaeetus leucocephalus	Bald Eagle	Listed threatened, under review for delisting
Lycaeides melissa samuelis	Karner Blue Butterfly	Listed endangered
Nicrophorus americanus	American Burying Beetle	Listed endangered, extirpated
Sistrurus catenatus catenatus	Eastern Massasauga Rattlesnake	Candidate for future listing

Source: NHI, 2005

RECREATIONAL FACILITIES AND USE

Existing Facilities and Services

The Black River State Forest provides a wide range of recreational opportunities. People come to enjoy camping, hiking, snowmobiling, fishing, bird watching, cross-country skiing, hunting and other activities. While snowmobiling has decreased due to a lack of snow, ATV riding has greatly increased.

The Black River State Forest has extensive trails for hiking, skiing, biking, nature walks, snowmobiling, and ATV/motorcycle riding. There are 35 miles of hiking, skiing and biking trails. The majority of these multi-use trails are located about five miles northeast of Millston on County Highway O, then north about one mile on Smrekar Road. Along the Red Oak and Central trails there are two rest areas with an Adirondack shelter, small fire ring, and picnic table. There are nine loops and all the trails are designed and marked for one-way skiing and bike travel with the exception of the link trails. The link trails are designed for two-way travel. The ski trails are groomed for both diagonal and skate style skiing. The trails are typically groomed after heavy weekend use and new snowfalls. A rustic ski shelter was recently constructed by the Black River Trail Foundation at the Smrekar parking lot. There are three nature trails totaling four miles in the forest at Castle Mound, East Fork and Pigeon Creek. Castle Mound and Pigeon Creek also contain bike trails.

Currently, there are nearly 48 miles of snowmobile trails in the state forest; approximately 33 miles of this total are also designated for ATV/motorcycle use. The state forest trails connect to the adjacent county forest trails so users have the ability to travel north/south between Millston and Lake Arbutus and east/west between Black River Falls and Pray. The large, linked trail system, along with easy access to the interstate, has generated a significant increase in ATV use on the property in recent years. The high use of the trails by ATVs during non-frozen conditions impacts the sustainability of the trails, increases maintenance needs, adds safety concerns, conflicts with other types of recreation and potentially creates environmental damage. In addition, many of the ATV trails were not originally designed for ATV use, which is one of the main underlying causes of environmental degradation.

The property has three family campgrounds, one group camp, one equestrian campground, as well as picnic and day use facilities. The family campgrounds are Castle Mound, Pigeon Creek, and East Fork. Castle Mound Campground located on Highway 12, one mile east of Black River Falls, has 35 sites, six with electricity. Castle Mound also has showers, flush toilets, ADA accessible facilities, and a sanitary dump station. The

campground is open year-round and campsites can be reserved between May 15th and October 1st and are first come, first serve the rest of the year. The campground also features a self-guided nature trail. Pigeon Creek Campground is located on North Settlement Road two miles northeast of Millston and is ADA accessible. The campground has 38 campsites, none with electricity; five sites are available year-round on a first come first serve basis. There is a five mile mountain bike trail at the campground that connects to 20 miles of hiking/skiing/biking trails. The Pigeon Creek Flowage has a beach for swimming and fishing. The East Fork Campground is located on the north end of the state forest on Campground Road. There are 24 sites, none with electricity; half of the sites are located along the bank of the East Fork of the Black River. Camping for all sites is available on a first come first serve basis. A small boat/canoe landing is located at the campground entrance. There is a nature trail along the bank of the East Fork of the Black River. Backpack camping, by permit, is also available on the property. The Black River State Forest Superintendent has the authority to modify the length of time campgrounds are open based on budget and staffing levels.

The Group Camp, located on the north end of the forest on Campground Road can accommodate up to 50 people. Water, pit toilets, picnic tables, cooking grills, a dog kennel, and a large fire ring are provided. The indoor building at the Group Camp is popular year-round. Twelve people can sleep comfortably. There are wood bunks in the cabin as well as a stove, refrigerator, gas fireplace, heated floors, and a bathroom with shower. The indoor facility is ADA compliant. Reservations are required and a two-day minimum stay is required on summer weekends. The Group Camp is a popular facility and frequently occupied.

The Equestrian Campground is located on the north end of the forest on Campground Road. Twelve sites are available on a first come first serve basis and include a picnic table, fire ring and tethering post. None of the sites have electricity but the campground has a vault toilet and a solar powered pump for water. The 20 mile horse trail begins at the campground.

South of Black River Falls, two campsites off of Hawk Island Road are available for canoeists. Camping is limited to a one night stay. Each site has a picnic table and fire ring. A unisex portable restroom is available.

Picnic facilities are located at the three campgrounds. All have hand pumps for water, picnic tables, grills and pit toilets. Castle Mound and Pigeon Creek have playground equipment and are ADA accessible. Perry Creek Park, Oxbow Pond, and Robinson Beach provide limited picnic facilities such as picnic tables and grills. There is also a log cabin picnic shelter at Castle Mound available by reservation. The shelter has a stone fireplace, electricity, tables, and outside cooking grills. The swimming area at Robinson Beach is anticipated to close due to lack of visitors. As a result, swimming will be more focused toward the facilities available at Pigeon Creek.

The forest also provides opportunities for other types of recreation. Hunting and trapping occur across the property for whitetail deer, turkey, grouse, bear, and small game such as rabbits, beaver, otter, muskrat, waterfowl and upland game. Archery hunting is increasing on the forest. An increase in illegal baiting for wildlife, especially deer has recently been noted. Fishing is also available on the flowages and on the Black River for panfish, northern pike, walleye, musky, sucker and bullhead. The forest contains 20 lakes totaling 572 acres, all are flowages except Lee Lake a 37-acre lake near Millston, Oxbow Pond, and a six acre unnamed lake located in the north end of the forest. Ten of the lakes are accessible only by a trail, three have a public boat launching facility, six do not have a defined access point, and one has a barrier-free boat ramp (WDNR, 2003). An accessible fishing pier is available at Teal Flowage.

Because the contact stations at the family campgrounds, ski trail parking lots and Robinson Beach are irregularly staffed, determining accurate visitor attendance numbers is difficult. Most state forest visitors are "day use" only users. The highest numbers of day use visitors occur in June, July, and August. The highest campground use occurs in July and the lowest is from December to March. Table 3.8 shows campground use in the state forest for 2005. The table lists the number of campers per night at the state forest.

June, July and August are the busiest months at the three family campgrounds, with weekends receiving the highest level of usage. Castle Mound is usually at or near capacity on the weekends during this time, while East Fork and Pigeon Creek are rarely occupied to full capacity. The percent occupancy for the summer months is shown in Table 3.9.

Special Recreational Settings

Dike 17 Wildlife Area, a 3,700 acre parcel, is primarily managed for waterfowl and Sharp-tailed Grouse. Each fall ducks and geese are attracted to the area which in turn attracts hunters and sightseers. The twenty flowages of the Dike 17 area were constructed by the CCC and Works Progress Administration (WPA) crews in the 1930s. The area has an observation tower for bird and animal observations. Approximately 2,100 acres of the area is a wildlife refuge and is home to several endangered and threatened species such as Bald Eagle, Osprey, Cooper's Hawk, Blanding's turtle, and the Karner blue butterfly.

SOCIAL AND CULTURAL RESOURCES

Land Ownership

Most of the land near and adjacent to the Black River State Forest is owned by the county and enrolled in Wisconsin's County Forest Program. Other land adjacent to the forest includes private ownership some of which is under cranberry production or enrolled in the managed forest law program and land owned by the Ho-Chunk Nation.

Historical/Archeological Resources

The State of Wisconsin Historical Society identified thirteen prehistoric archeological and historical sites on the forest plus an historic farmstead and cemetery, and Native American pow-wow grounds. The farmstead, located in the Overmeyer Hills, contains a root cellar, hand-dug well and an historic church cemetery. The site has been restored and is maintained by the forest. The historical sites on the property include five prehistoric campsites, four cemeteries, one group of burial mounds, a stone pipe findspot, a copper artifact findspot, and a "sacred spring."

Administrative and Other Facilities

The Black River State Forest has numerous administrative and operations buildings including: six storage buildings, three Park Entrance and Visitor Stations (PEVS), three small entrance stations at day use areas, two recreation shelters, three wood bins, one indoor group camp and two observation towers. The PEVS are located at East Fork, Castle Mound and Pigeon Creek Campgrounds, and the small entrance stations are located at Robinson Beach, the Smrekar trail, and the Wildcat trail. The recreation shelters are located at Castle Mound and the Smrekar trail. Four of the six storage buildings are located at Castle Mound ranging in size from 80 square feet to 2400 square feet. The East Fork, Pigeon Creek, and Castle Mound campgrounds each contain a wood bin that is 150 square feet. The indoor Group Camp is a 936 square feet wood building with electric heat and a gas fireplace. The building is equipped with water, fire extinguishers, electricity, and a bathroom plus an outdoor four unit vault toilet and dog kennel. The DNR owns 15.5 miles of road within the forest and the municipalities own 134 miles of road. Parking lots in the forest total approximately 500 stalls. One observation tower is located at Castle Mound and was built in 1966 to replace a fire lookout cabin on top of the mound; the other observation tower is located at the Dike 17 Wildlife Area.

TABLE 3.8 BLACK RIVER STATE FOREST APPROXIMATE CAMPGROUND VISITORS IN 2005 AND FIVE YEAR AVERAGES

Campground	Jan-Feb	Mar-Apr	May-June	July-Aug	Sep-Oct	Nov-Dec	Total 2005	5-year Average
Castle Mound	44	244	2,212	3,592	1,668	296	8,056	7,074
East Fork	4	152	1,188	1,580	1,244	268	4,436	4,354
Pigeon Creek	40	324	1,644	3,248	1,780	572	7,608	7,679
Group Camp	167	188	362	577	351	236	1,881	1,786
Canoe Camp	0	10	20	50	25	0	105	134
Equestrian Camp	0	52	192	104	212	4	564	465
Other (Backpack, Hunter)	2	85	199	118	168	658	1,230	1,524
Total	257	1,055	5,817	9,269	5,448	2,034	23,880	27,141

Note: For the group and canoe camp, the campers list the number in their party, and for the campgrounds, the average party is four people so the numbers of paid nights are multiplied by four.

TABLE 3.9 PERCENT OCCUPANCY OF FAMILY CAMPGROUNDS IN THE BLACK RIVER STATE FOREST (JUNE-AUGUST)

Campground	June 2005	July 2005	August 2005	3-Month Average	5-Year Average
Castle Mound	48%	68%	53%	56%	54%
East Fork	21%	21%	28%	23%	29%
Pigeon Creek	19%	42%	27%	29%	32%

REGIONAL CONTEXT

LAND OWNERSHIP AND LAND-USE PATTERNS

The Black River State Forest is located in Jackson County. Housing and population density in the region are low compared to other parts of the state. Between 2000 and 2005 the population in Jackson County increased by 3.4% (US Census 2000). In 2005, the county population was 19,828 with Black River Falls, the largest community in the county, having a population of 3,601 (State of Wisconsin 2005). The overall road density in the region is much lower than in most parts of the state even though Interstate 90/94 runs through the region and links the state forest and surrounding area with large metropolitan communities such as Minneapolis/St. Paul, Madison, Milwaukee, and Chicago. Other access routes for the forest include State Highways 12 and 54 and County Roads O and K.

The Biotic Inventory and Analysis of the Black River State Forest and Meadow Valley Landscape Study Area encompasses 710,180 acres in portions of Clark, Jackson, Juneau, Monroe, and Wood Counties (NHI 2005). There is a blend of land ownership types in this area with almost half of the study area (342,000 acres) being publicly owned. The largest tract of public land is the Clark County Forest at 132,852 acres. The Black River State Forest is Wisconsin's third largest state property. There are 10 State Natural Areas in the region; four are located within the state forest. The large tracts of private land in the region are primarily committed to cranberry production; 55% of the state's cranberry beds occur in this region. The Ho-Chunk Nation and individual tribal members also own property in the region.

Land cover is primarily forested and non-forested wetland. Commercial forestry is a major activity with fragmentation being less pronounced here than in the southern part of the state. Historic wetland alteration, primarily for agricultural use was unsuccessful except for cranberry production. Agricultural land use in the region is low.

The forest is close to Fort McCoy Military Training Center which is situated on approximately 60,000 acres and provides support and training facilities for over 100,000 military personnel annually. Fort McCoy recently renegotiated an expired land use agreement for military training purposes with the Black River State Forest.

BIOLOGICAL RESOURCES AND ECOLOGICAL NEED

Natural Resources

The U.S. Department of Agriculture Forest Service Forest Inventory and Analysis[3] (FIA 2006) for Clark, Eau Claire, Jackson, Juneau, Monroe, Trempealeau, and Wood counties indicate the total forest cover in the region remains the same today as it did in 1983 while the age of the forests is increasing (Miles 2006). The total forest cover and age of the forests for the seven county region is shown in Table 3.10 below.

Wisconsin's Natural Heritage Inventory (NHI) Program[4] indicates the presence of many unique, rare, and underrepresented species in the study area. As of 2006 the NHI documented 47 rare plants and 119 rare animal species within the study area. Forty-seven of the rare animal species have at least 25% of their statewide occurrences in the study area, the most well-known being the Karner blue butterfly. Other rare animal species found in the study area include the bald eagle, osprey, bobcat, goshawk, and timber (gray) wolf. The area also contains many natural communities. The NHI documented 196

3 FIA is an annual census of the nation's forests. It reports on status and trends in forest area and location; in the species, size, and health of trees; in total tree growth, mortality, and removals by harvest; in wood production and utilization rates by various products; and in forest land ownership.

4 The Wisconsin Natural Heritage Inventory (NHI) program is part of an international network of NHI programs. It is managed in Wisconsin by a section of the Wisconsin Department of Natural Resources' Bureau of Endangered Resources.

TABLE 3.10 PERCENT FOREST COVER AND TOTAL ACRES BY STAND AGE IN THE REGION FROM 1983-2004

		Stand Age				
Year	% Forested	0-20 years	21-40 years	41-60 years	61-80 years	81+ years
1983	44	470,200	280,800	502,400	230,100	209,100
1996	46	267,110	458,110	568,685	327,295	156,204
2004	45	264,757	383,257	608,947	375,568	122,907

Source: Miles, 2006

occurrences of 26 natural community types in the study area. Peatlands are more extensive in the region than anywhere else in southern Wisconsin. Similarly, the study area contains a greater acreage of contiguous forest than any other landscape of comparable size in the Eastern Broadleaf Forest Province. In addition to rare or unique species, the region contains several problematic invasive species such as common or glossy buckthorn, spotted knapweed, and leafy spurge.

Eco-regions

The National Hierarchical Framework of Ecological Units (NHFEU) defines eco-regions as geographic areas of similar physical, chemical, and biological characteristics in a hierarchical framework (Avers et al, 1994). The Black River State Forest is located within Province 222, Eastern Broadleaf Forest. The region is also within Section 222R, the Central Wisconsin Sands. The region is further divided into two subsections, the Central Wisconsin Sand Plain (222Ra) and the Neillsville Sandstone Plateau (222Rb). This eco-region is associated with a shallow irregular till surface with soils of loam, peat, and outwash sand. Wetlands, oak forests and pine-oak barrens are common and interspersed with smaller concentrations of more mesic hardwood forest and scattered hemlock relics. Current major land uses include forest management and agriculture (mostly in cranberry production).

RECREATIONAL RESOURCES AND USE

The activities people participate in depend on the region of the state and specific opportunities available. The 2005 Wisconsin Statewide Comprehensive Outdoor Recreation Plan (SCORP) listed walking for pleasure as the most popular outdoor activity in Wisconsin with 86% of adults participating. Other popular activities with over half of Wisconsin residents participating are family gatherings (81%), driving for pleasure (62%), and picnicking (57%). Bicycling, boating, visiting a beach, swimming, snow/ice activities of any kind and freshwater fishing round out the remaining top recreational activities in the West Central/ Lake Winnebago Region, which includes the Black River State Forest.

Public outdoor recreation in the region is provided by federal, state, county, municipal, and private landowners with the type and amount of opportunities varying depending on the size, management objectives, and owner. Recreational trail use, canoeing, fishing, hunting, and camping are all available in the region.

Canoeing and kayaking are popular in the state and the region provides opportunities for short half-day trips to multi-day trips. Paddling difficulty ranges from flat water to Class IV rapids. Portions of the East Fork and Black River run through the forest offering paddlers a mixture of whitewater and flat water canoeing along with rustic campgrounds. Several local businesses support and encourage visitation to these rivers by providing shuttles, guides, and private campgrounds.

Since 1992 the number of people in Wisconsin who fish and hunt has remained steady. Jackson County has the most miles of Class I streams and the third highest mileage of Class II streams within the west central region of Wisconsin. Most of these streams are located in the western portion of the county and not in the state forest. The Black River State Forest contains 20 lakes, about 15% of the total number found in the county. The lakes in the state forest total 572 acres which is approximately 11% of the total acreage for the county. One issue in the region is access to streams and lakes. Access to streams in the county is often via easement or at public road crossings.

The 2005 SCORP noted that as Wisconsin's countryside becomes increasingly divided, recreation planners should anticipate increased pressure for large, open public spaces where hunting is allowed (WDNR, 2006). The Black River State Forest and the Jackson County Forest are two of the largest contiguous tracts of open hunting land in the southern part of the state. The trends show that the number of deer and turkeys harvested in the county is higher than the number of county residents who identify themselves as hunters or purchase licenses in the county. This suggests that the area is a destination for hunters. Private land open to hunting contributes to the overall acreage available in the area. Most private land that is open to hunting is suitable for big game such as black bear and white-tailed deer, and upland hunting for turkey, grouse, rabbit, squirrel, etc. There is some private land available and suitable for waterfowl hunting (ducks and geese). Table 3.11 summarizes the hunting land available in Jackson County.

There are over 100 campsites available on the Black River State Forest, 285 on the Jackson County Forest and over 700 available throughout the county. Private campgrounds account

TABLE 3.11 ACRES AVAILABLE FOR HUNTING IN JACKSON COUNTY

Land Ownership	Big Game	Waterfowl	Upland Game
County	117,204	117,204	117,204
Federal	1,682	1,682	1,682
Private	15,670	651	15,670
State	73,659	21,003	73,362
Total	208,215	23,336	207,918

Source: WDNR, 2003

for almost half the camping opportunities in the county. The public and private campgrounds serve different niches. Private campgrounds provide most of the developed camping opportunities and camping opportunities combined with guide services. The public campgrounds provide most of the rustic and backcountry opportunities. If you include the surrounding counties of Adams, Chippewa, Clark, Eau Claire, Juneau, Marathon, Monroe, Portage and Wood, then the number of campsites in the region increases to 2,352 electrical sites and 2,097 non-electrical sites.

There are a variety of trails in the region available for ATV riding, biking, cross-country skiing, hiking, horseback riding, snowmobiling, and snowshoeing. The fastest growing sports in the region are ATV riding and off-road mountain biking. There are over 100 miles of ATV trails running through the state forest and county forest in Jackson County and over 300 miles of snowmobile trails. The neighboring counties of Chippewa, Eau Claire, Clark, Wood, Portage, Juneau, Adams, Monroe, and Marathon provide an additional 227 miles of summer ATV trails, 944 miles of winter ATV trails, and 2,852 miles of snowmobile trails. Snowmobile trails make up the highest percentage of trails in the region, followed by ATV trails, bike trails, hiking, and cross-country ski trails. Poor winter snow conditions in recent years have significantly reduced the number of snowmobile users in the area.

The popularity of more passive forms of recreation such as bird watching and wildlife viewing, nature study, and nature photography are expected to increase in the future due to an aging population and the desire for people to participate in activities deemed more environmentally friendly according to the Wisconsin Northern State Forest Assessment of Recreational Supply and Demand. (WDNR, 2001). State lands account for nearly 90% of the acreage in the region available for wild resource recreation and many areas of the BRSF offer passive recreation attributes. These users, who are an important source of revenue for local communities, prefer lands that are "wild" meaning a small number of support facilities and a feeling of solitude. They like areas where motorized sports are not allowed and where few signs of management activities exist. These preferences may cause conflict with the increasing presence of ATV use in the area (WDNR, 2001).

CULTURAL RESOURCES

The Black River State Forest has been used for recreation and commercial timber harvest for many years and as a result has contributed greatly to the local and regional economies. In addition to this, the land and water are important to local users, both for recreation and as income derived from recreational use by non-local users. The DNR is committed to involving the public in the planning process and keeping them appraised of any changes in either use or forest management.

SOCIO-ECONOMIC TRENDS

Population Trends

Human population density is one of the most notable differences between the county and state. In 2000, Jackson County had only 19.3 people per square mile while the rest of the state averaged 98.8 people per square mile. (MRRPC, 2005). The low population density may contribute to more urban dwellers visiting the area for forest-based recreation. The easy access to the forest via Interstate Highway 90/94 positions the county in a prime location for visitors from Chicago, Milwaukee, Madison, Minneapolis, and other metropolitan areas.

Employment Trends

In 2003, the largest employment sectors in the Jackson County were government and government enterprises (29.0%), farm employment (10.2%), retail trade (9.0%), construction (8.8%), transportation and warehousing, and manufacturing (7.3%). Sectors comprising the largest percentage of total earnings were government and government enterprises (32.7%), construction (14.1%), transportation and warehousing (12.8%), manufacturing (9.4%), and farm earnings (6.4%). (MRRPC, 2005). In 1999 the median household income for Jackson County was $37,015 compared to $43,791 for the state. The top 10 employers in Jackson County in 2004 are shown in Table 3.12.

Economic Trends

Tourism-related travel expenditures in the region were $587 million in 2004. This was about 5% of the $11.8 billion in state travel revenues. The travel revenues in the region generated over 15,000 jobs and employed 9% of the labor force. Most travel dollars were spent on lodging, recreation, food, and shopping. Table 3.13 provides information on visitor tourism expenditures, employment impacts, and resident income impacts for the region and state. Jackson County ranks third highest for visitor expenditures and employment impact in the nine county area. (MRRPC, 2005)

Wood-based industries are an important part of the state and regional economies. Wisconsin is the number one paper making state in the nation. Approximately 18% of the jobs in Wisconsin are tied to either wood-based industries or tourism sensitive sectors. In Wisconsin over 1,800 companies in the timber industry employ over 99,000 people with a total payroll of $3.6 billion (WDNR, 2000). The value of annual timber removals in Wisconsin was almost $210 million and almost 82% of that was from private lands. Public forest lands in Wisconsin account for the remaining harvest value. On public lands, 50% of the harvest value came from federal property,

36% from county forests, and 14% on state lands. A 2000 report indicated the highest stumpage values were in the central and southwestern parts of the state. Central Wisconsin, which includes the Black River State Forest, valued annual timber removals at $62.8 million dollars (WDNR 2000).

Recreation in the forest also impacts the local economy. In a span of 10 years Jackson County saw an increase of over 200 percent in traveler spending from $22 million in 1994 to $72 million in 2005 according to Jackson County's 2005 Economic Impact, provided by the Wisconsin Department of Tourism. Eighteen percent of all expenditures were made in the winter, 22% were made in the spring, 36% in the summer, and 23% in the fall (WDOT, 2006). Some local businesses in the vicinity of the state forest report that ATV customers now account for a significant portion of their sales and revenues (Wyenberg, 2006).

Non-motorized forms of recreation also have a positive economic impact on local economies. The Wisconsin Department of Tourism found that the average expenditure for western Wisconsin trails, including the Elroy-Sparta Trail, for trail visitors who were not local was $26.43 per person per day (WDOT, 2000).

PROPERTY CAPABILITIES, LIMITATIONS, AND OPPORTUNITIES

Statutory and Other Mandatory Requirements

Management of the Wisconsin State Forest System is guided by Wisconsin Statute 28.04 which ensures that state forests will provide a range of economic, ecological and social benefits for now and years to come. A sustainable forestry-based approach is used to enable these aspects of the forest environment to be maintained and enhanced for current and future generations.

- The master plan process is guided by the following state and federal regulations:
- The Black River State Forest Master Plan will be developed within the parameters of Administrative Code NR 44, which governs master planning for DNR properties and requirements of WEPA (Wisconsin Environmental Policy Act).
- The Black River State Forest will be managed and developed as a state forest as outlined in state statutes 28.04 Wis. Stats.
- The state forest will be managed and developed in accordance with Administrative Code NR 150 (Environmental Impact) and NR 1(Natural Resources Board Policies).
- Activities on DNR properties are governed by Administrative Code NR 45 (Use of Department Properties)
- All other state statutes, administrative codes, and DNR manual codes will apply.

TABLE 3.12 TOP 10 EMPLOYERS IN JACKSON COUNTY IN 2004

Establishment	Product or Service	Number of Employees
Ho Chunk Nation	Tribal government	1000+
Millis Transfer Inc	Gen. freight trucking	500-999
County of Jackson	Executive and legislative offices	250-499
Black River Falls Public School	Elementary and secondary schools	250-499
Lunda Construction Co	Highway, street, and bridge construction	250-499
Department of Corrections	Correctional institutions	250-499
Leeson Electric Corp	Motor and generator mfg.	100-249
Black River Memorial Hospital	Gen. medical and surgical hospital	100-249
Fleet Guard Inc	Misc. general purpose machinery mfg.	100-249
Flying J Inc	Gasoline stations with convenience stores	100-249

Source: MRRPC, 2005

TABLE 3.13 TOURISM IMPACT, VISITOR, EMPLOYMENT AND INCOME IMPACT IN 2004

Jurisdiction	Total Visitor Expenditure	Total Employment Impact
Buffalo	$19,621,827	519
Crawford	$49,866,224	1,316
Jackson	$76,260,278	1,674
LaCrosse	$212,464,287	5,829
Monroe	$108,354,273	2,859
Pepin	$8,135,868	213
Pierce	$32,393,430	855
Trempealeau	$38,247,980	1,010
Vernon	$41,591,257	1,097
Region	$586,935,424	15,372
State	$11,781,228,510	309,207

Source: MRRPC, 2005

Forest Certification
State forest management is now guided by recent dual forest certification under the Forest Stewardship Council (FSC) and the Sustainable Forest Initiative (SFI). To maintain this certification, the state of Wisconsin must manage state forests using strict environmental, social, and economic standards as outlined in the certification agreement.

ECOLOGICAL SIGNIFICANCE AND CAPABILITY OF THE BLACK RIVER STATE FOREST

This analysis provides baseline information and as new information becomes available, it will be incorporated into the planning process as part of a dynamic and responsive tool used both by planners and property managers. The property and regional analysis identifies trends, issues and opportunities related to the property in a regional context, providing the basis for future decisions. The property, the region, and the role the property plays in a regional context will help shape and guide the master plan.

Forest Management Capability
Forest management practices are the basis for creating a healthy forest and diverse wildlife habitat. Current forest management follows silviculture guidelines and considers the needs of numerous rare species. Timber harvests, conducted in accordance with acceptable silvicultural prescriptions, and within the annual allowable harvests, create age diversity critical for wildlife food and cover needs, generate a continual flow of forest products to the market, reduce the load of fuel for potential forest fires and stimulate the local economy by providing employment opportunities. Regeneration efforts, both natural and artificial, keep the state forest ownership in a productive status and ensure a variable range of species.

The forest has higher percentages of jack pine, red pine, and mixed conifer-hardwoods than other parts of the state. White pine acreage has been steadily increasing and will provide opportunities to enter sawtimber markets in the future. The forest also includes cover types such as oak, aspen, and paper birch which are primarily medium aged. Red maple is found but is not dominant.

More pressure will be placed on publicly owned lands to provide the needs and expectations from escalating global demand for wood products. An increase in recreational demands and a decrease in private forestlands available for timber production also will impact the state forest resources.

Ecological Capability
The large, continuous forested area, and the intermixed open areas and wet communities of the state forest and surrounding areas provide habitat and a niche for numerous wildlife species. This includes mammals that require large ranges (e.g. timber (gray) wolf, black bear), raptors that require open water or closed forest (e.g. Bald Eagle, Red-shouldered Hawk), birds that require expanses of savanna or prairie (e.g. Woodcock, Sharp-tailed Grouse) as well as many others. The current diversity of wildlife also has been influenced by the creation and maintenance of a dike and dam system created in the early 1930s. For the continued health of the wildlife community, the maintenance of healthy natural communities is essential. This is not only for the benefit of the rare wildlife species, but also for a wide variety of species including white-tailed deer, turkey, grouse, beaver, songbirds, herpetiles, invertebrates and fish. Efforts are also directed at increasing the diversity of native wildlife species represented. For example, opportunities may exist to manage for an elk herd on the property.

Plants, animals, and natural communities that are geographically limited and highly localized in Wisconsin are well represented within the Black River State Forest. Area sensitive species such as large predators, forest interior birds, and many grassland birds are present and can be maintained with appropriate resource management. The peatlands support many species that are rare or absent from similar habitats in northern Wisconsin. Older stands of white pine-red maple swamp support distinctive collections of plants and animals including many that are rare. There are opportunities to protect, maintain, manage, and restore pine-oak barrens, dry pine-oak forests, white pine-red maple swamp, central poor fen, muskeg, tamarack-black spruce swamp, central sands pine-oak forest, floodplain forest, southern mesic forest, northern dry-mesic forest, dry cliff, and moist cliff. These native plant communities were chosen because the state forest contains occurrences that are relatively large and show little evidence of disturbances such as hydrologic alteration. Many northern mammals, birds, invertebrates, and plants occur here at or near their southern range limits.

The soils in the Black River State Forest are generally acidic, infertile, and prone to drought; the sands of this area are among the most sterile soils in the state. Extensive areas of organic soils (peats and mucks) are associated with the area's abundant wetlands. Restrictive soil features for recreation development are ranked as "severe" (on a scale of slight, moderate, or severe) for all three major soil types on the forest due to the sandy and acidic nature of the soils.

Karner blue butterfly is an important species on the forest and forest, recreation and wildlife management activities are compatible with the existing Habitat Conservation Plan (HCP). The Karner blue butterfly is important because it has its largest global population in the region. Additional areas may be suit-

able for habitat manipulation to favor Karner blue butterfly and other endangered or species of concern.

Invasive species are becoming a concern across the state and the Black River State Forest is no exception. Primary invasives are glossy or common buckthorn, spotted knapweed, and leafy spurge. Management strategies are currently being developed to identify, prioritize and control invasive plants on the property to limit the loss of critical habitat and site quality.

The Black River corridor, its tributaries, and adjacent community types are vital components of the property both from a recreational point of view but also as an ecological resource for native species. The Black River corridor and its tributaries support significant occurrences of natural communities, support many rare species, and afford the opportunity to maintain connections with other southern Wisconsin landscapes. Unimpounded stretches of the headwater streams originating in the peatlands of this region provide habitat for a number of rare invertebrate species. Every consideration should be given to maintaining the unique and valuable resource.

RECREATIONAL SIGNIFICANCE AND CAPABILITY OF THE BLACK RIVER STATE FOREST

The state forest's relative proximity to major population centers, along with the interstate artery, makes public access to the property and surrounding areas convenient and easy and is considered a regional destination for outdoor recreation opportunities. Recreational amenities abound, and the flowages and rivers are already a large draw to recreational activities. Water based recreation activities such as boating, canoeing, fishing and swimming are popular on the property and public access to rivers and beaches provide a niche in the area. There are also four popular campgrounds in the forest which are available for year-round camping. The trail system on the forest provides some of the best opportunities in the region for hiking, biking, skiing, horseback riding, snowmobiling and ATV riding. Another niche of the Black River State Forest and surrounding county forest land is the opportunity for hunting which draws people from around the region. Dike 17 is a unique and popular locale for hunters, bird watchers, and hikers alike.

Growth of motorized recreation uses needs to be balanced with the increasing interest in passive forms of recreation. The frequency of user conflicts may increase on the state forest when incompatible recreation activities overlap. The rise in motorized recreation will place more pressure on the property's existing ATV trail system and will impact the sustainability of the landscape. Local economic needs, which are influenced by state forest recreation uses, must be equalized with the forest's ecological capabilities. Private enterprise also provides access to many recreational experiences in the area so that the state forest does not need to provide the entire gamut of facilities. Jackson County and the surrounding Clark and Eau Claire Counties have over 300 miles of trails on public and private land.

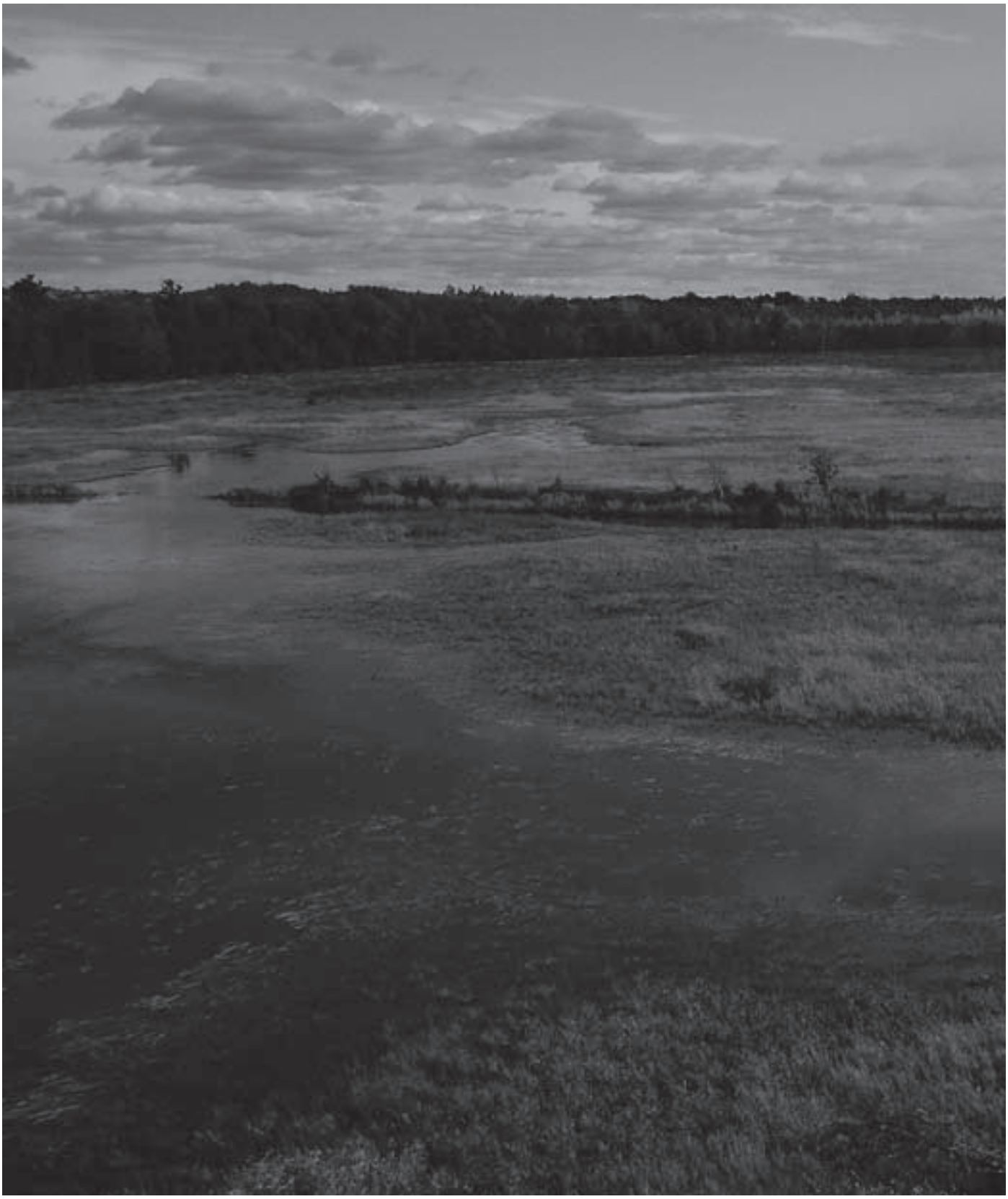
SUMMARY

The Black River State Forest plays a significant role in the central sands area of Wisconsin because it is part of a large concentration of public ownership, forested areas, and is less fragmented than the southern portion of the state which creates unique opportunities for landscape scale management. The property is exemplified by lack of roads and low human population densities that are similar to the wildest areas of northern Wisconsin. Rare species and natural communities also abound including some that are globally rare and some where the state forest offers the best opportunities for management in the entire state.

The Black River State Forest offers timber production, recreation, and landscape scale natural community restoration opportunities that are unmatched this far south in Wisconsin. The state forest is a property that is highly suitable for providing a range of forest products and recreation opportunities while enhancing natural communities and habitats. Opportunities exist to protect additional water and land resources, to enhance management efficiencies, to buffer against development, and enhance connectivity. Given all of these points, modification of the forest boundaries could enhance connectivity between public lands, reduce some of the challenges and limitations for management and recreation, and buffer against problems associated with the development adjacent to natural communities. Boundary adjustment opportunities exist to extend protection to key sites including the East Fork of the Black River and the Black River corridor.

As the largest block of state ownership in the area, the Black River State Forest has a special role to play in providing ecological, recreational, economic, and cultural benefits to the region. The property needs to balance natural community management, recreation needs, timber production, and social needs within the capabilities of the land.

REGIONAL CONTEXT



APPENDICES

APPENDIX A. BLACK RIVER STATE FOREST MASTER PLAN DESIGNATION PROCESS FOR STATE NATURAL AREAS

Generally, natural areas are tracts of land or water harboring natural features that have escaped most human disturbance and that represent the diversity of Wisconsin's native landscape. They contain outstanding examples of native biotic communities and are often the last refuges in the state for rare and endangered plant and animal species. State Natural Areas (SNAs) may also contain exceptional geological or archaeological features. The finest of the state's natural areas are formally designated as State Natural Areas.

The Wisconsin State Natural Areas Program oversees the establishment of SNAs and is advised by the Natural Areas Preservation Council. The stated goal of the program is to locate, establish, and preserve a system of SNAs that as nearly as possible represents the wealth and variety of Wisconsin's native landscape for education, research, and to secure the long-term protection of Wisconsin's biological diversity for future generations. SNAs are unique in state government's land protection efforts because they can serve as stand alone properties or they can be designated on other properties, such as a state forest. By designating SNAs within the boundary of the Black River State Forest, two different, legislatively mandated Department goals are being accomplished. This arrangement makes abundant fiscal sense because the state does not have to seek out willing sellers of private lands to meet the goals of multiple Department programs. This avoids duplicating appraisal and negotiation work and provides dual use of land that is already in public ownership.

The process to establish a SNA begins with the evaluation of a site identified through field inventories conducted by DNR ecologists, including the Biotic Inventory and Regional Analysis. Assessments take into account a site's overall quality and diversity, extent of past disturbance, long-term viability, context within the greater landscape, and rarity of features on local and global scales. Sites are considered for potential SNA designation in one or more of the following categories:

- Outstanding natural community
- Critical habitat for rare species
- Ecological reference (benchmark) area
- Significant geological or archaeological feature
- Exceptional site for natural area research and education

Designation Process of SNAs

Step 1: Assessments
Biotic Inventory and
SNA GAP analysis

Step 2: Preferred Alternative
The highest rated biotic sites and those with potential for filling gaps.

Step 3: Proposed Master Plan
Native community sites
Forest Production Area

Step 1: Results from both the SNA GAP analysis and the Biotic Inventory, which were conducted on the BRSF within the last few years, were used to decide which areas would be SNA opportunity areas.

STATE NATURAL AREA PROCESS

The data gathered via the Biotic Inventory identifies and evaluates the natural communities, significant plant and animal populations, and selected aquatic features and their associated biotic communities. This report emphasized important protection, management, and restoration opportunities, focusing on both unique and representative natural features of the BRSF property and surrounding landscape.

The SNA GAP analysis looks at representation for each primary natural community in each Ecological Landscape and determines if an adequate number of ecological reference areas are in place to capture the variation across the landscape.

Step 2: Using both the Biotic Inventory and SNA GAP analysis, the BRSF Preferred Alternative took sites ranked high and proposed native community management areas.

Step 3: After public review of the preferred alternative, these opportunity areas were then designated Native Community Management Areas. After the management goals were developed, the team reassessed the boundaries to assure that each forest stand was in the correct management area. Experts worked together to ensure that these sites were also given consideration as potential State Natural Areas.

Once approved by the Natural Resources Board, sites are formally "designated" as SNAs and become part of the Wisconsin State Natural Areas system. Designation confers a significant level of recognition of these sites' natural values through state statutes, administrative rules, and guidelines.

Impact to Master Plan Process

The process for selecting and designating SNAs is determined by cooperative efforts between two programs within the DNR: The Division of Forestry and the Bureau of Endangered Resources. The master planning process for state forests requires that the goals set by the Division of Forestry be considered before the Bureau of Endangered Resources submits candidate sites for SNA designation. This is done so that all sites are evaluated for timber production, which is outlined as a Division of Forestry priority. As a result, SNAs are considered overlays to Land Management Areas. In this way, the same piece of land can achieve the goals of two different Department programs. Management activities for each SNA reflect the general management prescriptions for the area in which the SNA is located. For example, a SNA located within an area managed for white pine will follow the objectives for that land management area, rather than a separate SNA management plan. The exact same timber management would occur with or without SNA designation.

Land Management Impact by Native Community Management Areas and Designation of SNAs

Native community management areas emphasize aspects of the ecosystem that provide the full range of forest types and age classes as promoted by the property goals. Areas are designated to manage for old growth characteristics, large areas of un-fragmented forest, and to protect and enhance water resources.

SNA Management Activities

State Natural Areas are not exclusively passive management. Between 2003 and 2007, over 200 SNAs all over Wisconsin have had some type of active management. Examples of management activities include exotic species removal, burning and fuel reduction, brushing, trail development, ditch filling, and planting. Timber harvesting is not a primary focus of a SNA, but it is often necessary to achieve the desired ecological goals of a specific habitat. During the same five years, 29 commercial timber operations were conducted on SNAs to achieve the ecological goals of the site. Regardless of any designation, wildfires on state forests would be actively suppressed, safety measures would occur in developed areas, and insect and disease outbreaks would be considered for control.

Recreational Impacts

Impacts would be minimal because the recreation opportunities for any given area were determined before consideration as a SNA. State Natural Areas are not appropriate for intensive recreation and such areas were automatically ruled out as potential sites during the development of the preferred alternative. However, SNAs can accommodate low-impact activities such as hiking, bird watching, and nature study. Examples of existing facilities within SNA sites include hiking and cross-country ski trails, and boat landings and ramps.

Benefits for a Partnership between State Forests and the State Natural Areas Program

The SNA program has standardized methods for conducting long-term monitoring of ecosystems and also has a network with a broad range of researchers, from aquatic biologists and botanists to zoologists that can be encouraged to conduct research on the state forest to enhance our understanding of the BRSF ecosystem. The experts in the Division of Forestry have experience in monitoring the trees and other plants, while SNA ecologists have expertise in monitoring terrestrial invertebrates, fungi and lichens, ground layer plants, mammals, reptiles and amphibians, and birds. Together an exceptional collaborative monitoring program could be developed.

- The SNA program can bring a broad range of educators together to assist in understanding and interpreting the ecology of the BRSF.
- The SNA program can lend its expertise to help create ecological interpretive signs and trail guides for better understanding of the full range of biological diversity on the BRSF.
- The SNA Program can assist in conducting land management activities such as invasive exotic species control, brushing and conducting prescribed burns.
- The Division of Forestry would not lose any of its management or decision-making authority, but gain the ability to provide a broader range of opportunities that would help fill its mission by collaborating with the SNA Program.
- An outside forest certification audit of the State Forest Program concluded that cooperation between the Division of Forestry and the State Natural Areas Program was commendable. This cooperation should continue to maintain such a high rating by future auditors.
- With a joint consideration, the same piece of land can achieve the goals of two different programs. If there were a lack of teamwork, the SNA Program would still pursue sites to fulfill its goals. Such a venture could duplicate an additional 4,278 acres of land with an approximate cost of $10.5 million or more to the state of Wisconsin. Cooperation makes abundant fiscal sense.

APPENDIX B. ENDANGERED OR THREATENED SPECIES AND SPECIES OF SPECIAL CONCERN

The table below lists animals on the Black River State Forest which are endangered, threatened or of special concern, based on the Natural Heritage Inventory (NHI) database. The listing includes both state and federal designations. The aim of a "Special Concern" designation is to focus attention on certain species before they become threatened or endangered. Species of Greatest Conservation Need (SGCN) are also indicated.

Scientific Name	Common Name	State Status	Federal Status	SGCN
Agabus bicolor	A Predaceous Diving Beetle	SC/N		x
Alasmidonta marginata	Elktoe	SC/H		
Ammodramus leconteii	Le Conte's Sparrow	SC/M		x
Anguilla rostrata	American Eel	SC/N		x
Apalone mutica	Midland Smooth Softshell Turtle	SC/H		x
Arphia conspersa	Speckled Rangeland Grasshopper	SC/N		x
Atrytonopsis hianna	Dusted Skipper	SC/N		
Banksiola dossuaria	A Giant Casemaker Caddisfly	SC/N		x
Botaurus lentiginosus	American Bittern	SC/M		x
Buteo lineatus	Red-shouldered Hawk	THR		x
Callophrys henrici	Henry's Elfin	SC/N		
Callophrys irus	Frosted Elfin	THR		x
Canis lupus	Gray Wolf (aka Timber Wolf)	SC/FL	LE	x
Chlosyne gorgone	Gorgone Checker Spot	SC/N		
Chromagrion conditum	Aurora Damselfly	SC/N		
Cicindela patruela huberi	A Tiger Beetle	SC/N		x
Clemmys insculpta	Wood Turtle	THR		x
Cyclonaias tuberculata	Purple Wartyback	END		x
Cymbiodyta acuminata	A Water Scavenger Beetle	SC/N		x
Dendroica cerulea	Cerulean Warbler	THR		x
Dendroica kirtlandii	Kirtland's Warbler	SC/FL	LE	x
Diadophis punctatus edwardsii	Northern Ringneck Snake	SC/H		
Dichromorpha viridis	Short-winged Grasshopper	SC/N		x
Empidonax virescens	Acadian Flycatcher	THR		x
Emydoidea blandingii	Blanding's Turtle	THR		x
Erynnis martialis	Mottled Dusky Wing	SC/N		x
Erynnis persius	Persius Dusky Wing	SC/N		x
Etheostoma clarum	Western Sand Darter	SC/N		x
Euphyes bimacula	Two-spotted Skipper	SC/N		

ENDANGERED OR THREATENED SPECIES AND SPECIES OF SPECIAL CONCERN

Scientific Name	Common Name	State Status	Federal Status	SGCN
Haliaeetus leucocephalus	Bald Eagle	SC/P		x
Hemidactylium scutatum	Four-toed Salamander	SC/H		x
Hesperia leonardus	Leonard's Skipper	SC/N		
Hydroporus badiellus	A Predaceous Diving Beetle	SC/N		
Ilybius discedens	A Predaceous Diving Beetle	SC/N		
Laccobius reflexipennis	A Predaceous Diving Beetle	SC/N		x
Limotettix pseudosphagneticus	A Leafhopper	SC/N		x
Lycaeides melissa samuelis	Karner Blue Butterfly	SC/FL	LE	x
Melanoplus fasciatus	Huckleberry Spur-throat Grasshopper	SC/N		x
Melanoplus stonei	Stone's Locust	SC/N		x
Moxostoma carinatum	River Redhorse	THR		x
Neurocordulia molesta	Smoky Shadowfly	SC/N		
Ochrotrichia riesi	A Purse Casmaker Caddisfly	SC/N		x
Ophiogomphus smithi	Sand Snaketail	SC/N		x
Oporornis formosus	Kentucky Warbler	THR		x
Orphulella pelidna	Spotted-winged Grasshopper	SC/N		x
Paradamoetas fontana	A Jumping Spider	SC/N		x
Percina evides	Gilt Darter	THR		x
Poanes massasoit	Mulberry Wing	SC/N		
Polyamia dilata	Prairie Leafhopper	THR		x
Protonotaria citrea	Prothonotary Warbler	SC/M		x
Psinidia fenestralis	Sand Locust	SC/N		x
Schinia indiana	Phlox Moth	END		x
Seiurus motacilla	Louisiana Waterthrush	SC/M		x
Sistrurus catenatus	Eastern Massasauga Rattlesnake	END	C	x
Somatochlora incurvata	Warpaint Emerald	END		x
Somatochlora tenebrosa	Clamp-tipped Emerald	SC/N		x
Sorex arcticus	Arctic Shrew	SC/N		
Sorex hoyi	Pygmy Shrew	SC/N		
Sorex palustris	Water Shrew	SC/N		x
Soyedina vallicularia	A Nemourid Broad-backed Stonefly	SC/N		x
Sympetrum danae	Black Meadowhawk	SC/N		
Trachyrhachys kiowa	Ash-brown Grasshopper	SC/N		x
Tritogonia verrucosa	Buckhorn	THR		x
Tympanuchus phasianellus	Sharp-tailed Grouse	SC/M		x
Williamsonia lintneri	Ringed Boghaunter	SC/N		x

Key:

State Status

END endangered
THR threatened
SC special concern
SC/P fully protected
SC/N no laws regulating use, possession, or harvesting
SC/H take regulated by establishment of open closed seasons
SC/FL federally protected as endangered or threatened, but not so designated by WDNR
SC/M fully protected by federal and state laws under the Migratory Bird Act.

Federal Status

LE listed endangered
C candidate for future listing

ENDANGERED OR THREATENED SPECIES AND SPECIES OF SPECIAL CONCERN

Plants

The table below lists plants on the Black River State Forest which are endangered, threatened or of special concern, based on the Natural Heritage Inventory (NHI) database.

Scientific Name	Common Name	State Status
Asclepias ovalifolia	Dwarf Milkweed	THR
Bartonia paniculata	Twining Screwstem	SC
Bartonia virginica	Yellow Screwstem	SC
Callitriche heterophylla	Large Water-starwort	THR
Carex assiniboinensis	Assiniboine Sedge	SC
Carex cumulata	Clustered Sedge	SC
Carex folliculata	Long Sedge	SC
Carex straminea	Straw Sedge	SC
Diarrhena obovata	Beak Grass	END
Epilobium palustre	Marsh Willow-herb	SC
Huperzia porophila	Rock Clubmoss	SC
Juncus marginatus	Grassleaf Rush	SC
Myriophyllum farwellii	Farwell's Water-milfoil	SC
Oryzopsis canadensis	Canada Mountain-ricegrass	SC
Platanthera hookeri	Hooker Orchis	SC
Poa paludigena	Bog Bluegrass	THR
Polygala cruciata	Crossleaf Milkwort	SC
Potamogeton diversifolius	Water-thread Pondweed	SC
Rhexia virginica	Virginia Meadow-beauty	SC
Scirpus georgianus	Georgia Bulrush	SC
Scleria triglomerata	Whip Nutrush	SC
Solidago sciaphila	Shadowy Goldenrod	SC
Talinum rugospermum	Prairie Fame-flower	SC
Thelypteris simulata	Bog Fern	SC
Utricularia geminiscapa	Hidden-fruited Bladderwort	SC
Viola fimbriatula	Sand Violet	END

Key:

State Status

END endangered

THR threatened

SC special concern

ENDANGERED OR THREATENED SPECIES AND SPECIES OF SPECIAL CONCERN

APPENDIX C. WILDLIFE SPECIES OF GREATEST CONSERVATION NEED

The following tables list vertebrate Species of Greatest Conservation Need (SGCN) associated with natural community types that are present on the Black River State Forest. Only SGCN with a high or moderate probability of occurring in the Central Sand Plains Ecological Landscape are shown. Numbers indicate the degree to which each species is associated with a particular habitat type (3=significant association, 2=moderate association, and 1=low association). Species-community combinations assigned either "3" or "2" in the table are also Ecological Priorities, as defined by the Wisconsin Wildlife Action Plan. See dnr.wi.gov/org/land/er/WWAP/ for more information.

MAJOR* OPPORTUNITIES TO SUSTAIN THE NATURAL COMMUNITIES EXIST IN THE CENTRAL SAND PLAINS

	Alder Thicket	Central Sands Pine - Oak Forest	Dry Cliff	Floodplain Forest	Impoundments/Reservoirs	Northern Sedge Meadow	Northern Wet Forest	Oak Barrens	Open Bog	Pine Barrens	Sand Prairie	Shrub Carr	Southern Dry-mesic Forest	Surrogate Grasslands	White Pine - Red Maple Swamp
Species Name	**Species that are Significantly Associated with the Central Sand Plains Landscape**														
American Bittern	1					3			3			1		1	
American Woodcock	3	1		1		1	1	1	1	1		3		1	1
Bald Eagle				1	3										
Black Tern					2	2									
Black-billed Cuckoo	3			2		1	1	2		2		3			
Blanding's Turtle	2			2	3	2		3		3	3	2	2		
Blue-winged Teal				2	2	2					1			2	
Blue-winged Warbler		1		2				1				2	2		1
Bobolink						3			2					3	
Brown Thrasher								3		3	3			2	
Dickcissel								1						3	
Eastern Meadowlark											2			3	
Field Sparrow								2		2	3			2	
Four-toed Salamander	3			3		2	2		3			3			
Franklin's Ground Squirrel								3		3	3			2	
Golden-winged Warbler	3	1					2		2	1		3	1		1
Grasshopper Sparrow								2		1	3			3	
Gray Wolf (aka Timber Wolf)	3	3		2		1	3	2	2	2		2	2		1
Greater Prairie-Chicken						2					1	1		3	
Henslow's Sparrow						1			2					3	
Lake Sturgeon					3										
Least Flycatcher		1		2								1	1		1
Lesser Scaup					2										
Mudpuppy					3										
Northern Harrier	1					3		2	2	2	1	1		3	
Osprey					3										

MAJOR* OPPORTUNITIES TO SUSTAIN THE NATURAL COMMUNITIES EXIST IN THE CENTRAL SAND PLAINS

	Alder Thicket	Central Sands Pine - Oak Forest	Dry Cliff	Floodplain Forest	Impoundments/Reservoirs	Northern Sedge Meadow	Northern Wet Forest	Oak Barrens	Open Bog	Pine Barrens	Sand Prairie	Shrub Carr	Southern Dry-mesic Forest	Surrogate Grasslands	White Pine - Red Maple Swamp
Species Name	**Species that are Significantly Associated with the Central Sand Plains Landscape (Continued)**														
Prothonotary Warbler				3											
Red-headed Woodpecker		2		2				2		1			2		
Red-shouldered Hawk				3									2		2
Short-billed Dowitcher					2										
Short-eared Owl						2			1		1	2		3	
Trumpeter Swan					2	1			1						
Upland Sandpiper						1		2		2	2			3	
Veery	3			2			2					3	2		3
Vesper Sparrow								3		3	3			1	
Western Meadowlark								2		1	2			3	
Western Slender Glass Lizard								3		3	3				
Whip-poor-will		3		1				2		2			3		
Whooping Crane						2			2						
Willow Flycatcher				1							1	3		2	
Wood Thrush		1		2			1						3		1
Wood Turtle	3			3		2	2	3		3	3	3			
Yellow-billed Cuckoo				3								2	2		1
	Species that are Moderately Associated with the Central Sand Plains Landscape														
American Golden Plover					2	1								2	
Bullsnake		2	3					3		3	3		2		
Canada Warbler	2	1					2					1			2
Canvasback					2										
Cerulean Warbler				3									3		
Connecticut Warbler							2		2	2					
Dunlin					2										
Eastern Massasauga Rattlesnake	3			3				3	3	3	3	3			
Eastern Red Bat	2	2		2	1	2	2	2	2	1		2	2		2
Hoary Bat	2	2		2	1	2	2		2			2	1		2
Hudsonian Godwit					1										
King Rail						1									
Lark Sparrow								3		2	3				
Le Conte's Sparrow						3			2					3	
Louisiana Waterthrush													3		

WILDLIFE SPECIES OF GREATEST CONSERVATION NEED

MAJOR* OPPORTUNITIES TO SUSTAIN THE NATURAL COMMUNITIES EXIST IN THE CENTRAL SAND PLAINS

	Alder Thicket	Central Sands Pine - Oak Forest	Dry Cliff	Floodplain Forest	Impoundments/Reservoirs	Northern Sedge Meadow	Northern Wet Forest	Oak Barrens	Open Bog	Pine Barrens	Sand Prairie	Shrub Carr	Southern Dry-mesic Forest	Surrogate Grasslands	White Pine - Red Maple Swamp
Species Name	**Species that are Moderately Associated with the Central Sand Plains Landscape (Continued)**														
Midland Smooth Softshell Turtle															
Northern Goshawk															2
Northern Long-eared Bat	2	2		2	1	2	1	2	2			2	2		2
Pickerel Frog	2			2	3	3	2		2			2			
Prairie Ringneck Snake		2						2			2		2		
Prairie Vole								2		1	3			2	
Red Crossbill		1					1			2					
Red-necked Grebe															
River Redhorse															
Rusty Blackbird	2			3					2			2			1
Sharp-tailed Grouse						2		3	1	3		1		2	
Silver-haired Bat	2	2		2	1	2	2		2			2	1		2
Solitary Sandpiper	1			3		1			2			1			
Water Shrew	2			2	1	1	3		1			1			1
Western Sand Darter															
White-tailed Jackrabbit								1		1	3			2	
Wilson's Phalarope						3									
Yellow Rail						3			3						
Yellow-bellied Racer			2					2		2	3		2		

**Major: A major opportunity for sustaining the natural community in the Ecological Landscape exists, either because many significant occurrences of the natural community have been recorded in the landscape or major restoration activities are likely to be successful maintaining the community's composition, structure, and ecological function over a longer period of time.*

IMPORTANT* OPPORTUNITIES MAY EXIST TO SUSTAIN THE NATURAL COMMUNITY IN THE CENTRAL SAND PLAINS

	Coastal Plain Marsh	Coldwater streams	Coolwater streams	Dry Prairie	Dry-mesic Prairie	Emergent Marsh	Moist Cliff	Northern Dry Forest	Northern Dry-mesic Forest	Northern Hardwood Swamp	Northern Mesic Forest	Southern Dry Forest	Southern Mesic Forest	Southern Sedge Meadow	Southern Tamarack Swamp (rich)	Submergent Marsh	Warmwater rivers	Warmwater streams
Species Name	**Species that are Significantly Associated with the Central Sand Plains Landscape**																	
American Bittern						3								2				
American Woodcock								1	1	2	2	1			2			
Bald Eagle																2	3	
Black Tern						3								1		2		
Black-billed Cuckoo								1	1	1	2				2			
Blanding's Turtle	2	2	2	3	2	3							2	2	2	3	2	2
Blue-winged Teal	1			1	2	3								2		2	1	
Blue-winged Warbler								1				2	2		2			
Bobolink					3									2				
Brown Thrasher				2	2			1										
Dickcissel				1	3													
Eastern Meadowlark				2	3									2				
Field Sparrow				3	2													
Four-toed Salamander		2	2			3	1			2	3		3	2	2			
Franklin's Ground Squirrel				1	3													
Golden-winged Warbler								2	2	2	2	1	1		1			
Grasshopper Sparrow				3	3													
Gray Wolf (aka Timber Wolf)								2	3	2	3	2	2		1			
Greater Prairie-Chicken				2	3									2				
Henslow's Sparrow					3									1				
Lake Sturgeon																	3	
Least Flycatcher								2	2	2	3	1	1					
Lesser Scaup						1										3	2	
Mudpuppy		2	1														3	
Northern Harrier				2	2	1								2				
Osprey																1	3	
Prothonotary Warbler																		
Red-headed Woodpecker								1	1			2						
Red-shouldered Hawk								1	2	1	2		2		1			
Short-billed Dowitcher						3										1		
Short-eared Owl				2	2	1								2				
Trumpeter Swan						3										3	1	
Upland Sandpiper				3	3									1				
Veery								1	2	3	2		2		1			

WILDLIFE SPECIES OF GREATEST CONSERVATION NEED

IMPORTANT* OPPORTUNITIES MAY EXIST TO SUSTAIN THE NATURAL COMMUNITY IN THE CENTRAL SAND PLAINS

	Coastal Plain Marsh	Coldwater streams	Coolwater streams	Dry Prairie	Dry-mesic Prairie	Emergent Marsh	Moist Cliff	Northern Dry Forest	Northern Dry-mesic Forest	Northern Hardwood Swamp	Northern Mesic Forest	Southern Dry Forest	Southern Mesic Forest	Southern Sedge Meadow	Southern Tamarack Swamp (rich)	Submergent Marsh	Warmwater rivers	Warmwater streams
Species Name	**Species that are Significantly Associated with the Central Sand Plains Landscape (Continued)**																	
Vesper Sparrow				3	2													
Western Meadowlark				2	3													
Western Slender Glass Lizard				3	3													
Whip-poor-will								2	2		1	3	1					
Whooping Crane						3								2		3		
Willow Flycatcher				1	2									2	1			
Wood Thrush									1	1	2	2	3		1			
Wood Turtle		3	3	3	2					2	3		2	2		3	3	3
Yellow-billed Cuckoo											1	1	2		1			
	Species that are Moderately Associated with the Central Sand Plains Landscape																	
American Golden Plover					2	2								1				
Bullsnake				3	3							2	2					
Canada Warbler								1	2	3	2				1			
Canvasback						1										3	3	
Cerulean Warbler											1	1	2					
Connecticut Warbler								3	1									
Dunlin						2											2	
Eastern Massasauga Rattlesnake				3	3	3								3				
Eastern Red Bat	2	3	3			2		2	2	2	2	2	2	2	1	2	2	2
Hoary Bat	2	3	3			2		2	2	2	2	1	1	2	1	2	2	2
Hudsonian Godwit						3										1		
King Rail						3								2				
Lark Sparrow				2														
Le Conte's Sparrow																		
Louisiana Waterthrush		3	3										3					
Midland Smooth Softshell Turtle																	3	
Northern Goshawk								1	2	1	3							
Northern Long-eared Bat	2	3	3			2		2	2	2	2	2	2	2		2	2	2
Pickerel Frog		3	3			3					2		2	3		3	3	3
Prairie Ringneck Snake				3	3							2						
Prairie Vole				3	3													
Red Crossbill								3	3		1							
Red-necked Grebe						3										2		

IMPORTANT* OPPORTUNITIES MAY EXIST TO SUSTAIN THE NATURAL COMMUNITY IN THE CENTRAL SAND PLAINS

	Coastal Plain Marsh	Coldwater streams	Coolwater streams	Dry Prairie	Dry-mesic Prairie	Emergent Marsh	Moist Cliff	Northern Dry Forest	Northern Dry-mesic Forest	Northern Hardwood Swamp	Northern Mesic Forest	Southern Dry Forest	Southern Mesic Forest	Southern Sedge Meadow	Southern Tamarack Swamp (rich)	Submergent Marsh	Warmwater rivers	Warmwater streams
Species Name	**Species that are Moderately Associated with the Central Sand Plains Landscape (Continued)**																	
River Redhorse																	2	
Rusty Blackbird						2									2			
Sharp-tailed Grouse				2	2													
Silver-haired Bat	2	3	3			2		2	2	2	2	1	1	2	1	2	2	2
Solitary Sandpiper	2	2	2			3								1				2
Water Shrew		3	3							3	2		2		1		1	2
Western Sand Darter																	2	
White-tailed Jackrabbit				3	3													
Wilson's Phalarope						3								1		2		
Yellow Rail																		
Yellow-bellied Racer				3	2							2						

**Important: Although the natural community does not occur extensively or commonly in the Ecological Landscape, one to several occurrences do occur and are important in sustaining the community in the state. In some cases, important opportunities may exist because the natural community may be restricted to just one or a few Ecological Landscapes within the state and there may be a lack of opportunities elsewhere.*

WILDLIFE SPECIES OF GREATEST CONSERVATION NEED

NATURAL COMMUNITY IS PRESENT* IN THE CENTRAL SAND PLAINS

	Bedrock Glade	Calcareous Fen	Cedar Glade	Emergent Marsh - Wild Rice	Hemlock Relict	Inland lakes	Mesic Prairie	Oak Woodland	Pine Relict	Wet Prairie	Wet-mesic Prairie
Species Name	**Species that are Significantly Associated with the Central Sand Plains Landscape**										
American Bittern				1						1	
American Woodcock		2								1	
Bald Eagle				1		3					
Black Tern				2		2					
Black-billed Cuckoo										1	
Blanding's Turtle			2	3		3	2	2		3	2
Blue-winged Teal				2		2	2			2	2
Blue-winged Warbler	2							2			
Bobolink		1					3			3	3
Brown Thrasher										1	
Dickcissel							3				1
Eastern Meadowlark		1					3			1	2
Field Sparrow			3				2				2
Four-toed Salamander											
Franklin's Ground Squirrel							2	2		1	2
Golden-winged Warbler											
Grasshopper Sparrow			1				1				
Gray Wolf (aka Timber Wolf)					1				1		
Greater Prairie-Chicken							3			2	3
Henslow's Sparrow							3			2	2
Lake Sturgeon						3					
Least Flycatcher								1			
Lesser Scaup				2		2					
Mudpuppy						3					
Northern Harrier		1		1			3			2	3
Osprey				1		3					
Prothonotary Warbler											
Red-headed Woodpecker								3			
Red-shouldered Hawk											
Short-billed Dowitcher											
Short-eared Owl							3			2	3
Trumpeter Swan				3		2					
Upland Sandpiper							2			2	2

NATURAL COMMUNITY IS PRESENT* IN THE CENTRAL SAND PLAINS

	Bedrock Glade	Calcareous Fen	Cedar Glade	Emergent Marsh - Wild Rice	Hemlock Relict	Inland lakes	Mesic Prairie	Oak Woodland	Pine Relict	Wet Prairie	Wet-mesic Prairie
Species Name	**Species that are Significantly Associated with the Central Sand Plains Landscape (Continued)**										
Veery					2			1	2		
Vesper Sparrow											
Western Meadowlark							1			1	
Western Slender Glass Lizard											
Whip-poor-will	2				1			3	2		
Whooping Crane											
Willow Flycatcher		2					2			2	2
Wood Thrush								2			
Wood Turtle								2		2	
Yellow-billed Cuckoo								1			
	Species that are Moderately Associated with the Central Sand Plains Landscape										
American Golden Plover							2			2	2
Bullsnake	3		3				2	3	2		
Canada Warbler					2				2		
Canvasback				2		2					
Cerulean Warbler								2			
Connecticut Warbler											
Dunlin											
Eastern Massasauga Rattlesnake		3					3			3	3
Eastern Red Bat		2	1		2	2		2	2		
Hoary Bat		2	1		2	2		1	2		
Hudsonian Godwit											
King Rail											
Lark Sparrow			3								
Le Conte's Sparrow										2	2
Louisiana Waterthrush											
Midland Smooth Softshell Turtle											
Northern Goshawk											
Northern Long-eared Bat		2	1		2	2		2	1		
Pickerel Frog		2				2	2			3	3
Prairie Ringneck Snake	3		3					2			
Prairie Vole							2				
Red Crossbill					1				2		

WILDLIFE SPECIES OF GREATEST CONSERVATION NEED

NATURAL COMMUNITY IS PRESENT* IN THE CENTRAL SAND PLAINS

	Bedrock Glade	Calcareous Fen	Cedar Glade	Emergent Marsh - Wild Rice	Hemlock Relict	Inland lakes	Mesic Prairie	Oak Woodland	Pine Relict	Wet Prairie	Wet-mesic Prairie
Species Name	**Species that are Moderately Associated with the Central Sand Plains Landscape (Continued)**										
Red-necked Grebe				1							
River Redhorse											
Rusty Blackbird		2									
Sharp-tailed Grouse							1			1	1
Silver-haired Bat		2	1		2	2		1			
Solitary Sandpiper											
Water Shrew						2					
Western Sand Darter											
White-tailed Jackrabbit							1				
Wilson's Phalarope										1	
Yellow Rail											
Yellow-bellied Racer			3								

**Present: The natural community occurs in the Ecological Landscape, but better management opportunities appear to exist in other parts of the state.*

APPENDIX D. GLOSSARY OF TERMS

Active Management: These areas apply primarily in the forest production areas and use general forest management prescriptions. Activities are achieved through clearcutting, selective cutting, thinning, timber stand improvement, natural or forced regeneration, herbicide treatments, and/or prescribed burning. These activities would be consistent with standard silvicultural practices associated with the forest timber types found in the area and are generally scheduled in the property's reconnaissance (inventory). Each management area will have a goal and objective consistent with site capabilities and forest cover types. While species composition would remain relatively consistent during the life of the master plan, the age class distribution would change due to timber harvesting. Forest users should expect to see ongoing annual vegetation manipulation.

Adaptive Management: A dynamic approach to forest management in which the effects of treatments and decisions are continually monitored and used, along with research results, to modify management on a continuing basis to ensure that objectives are being met.

Basal Area: The basal area of a tree is usually defined as the cross-sectional area at breast height in square feet.

Biological Diversity: The variety and abundance of species, their genetic composition, and the communities, ecosystems and landscapes in which they occur. Biological diversity also refers to the variety of ecological structures, functions, and processes at any of these levels.

Community Restoration: The practice of community restoration recognizes that communities, species, structural features, microhabitats, and natural processes that are now diminished or absent from the present landscape have a valuable role to place in maintaining native ecosystems. Under some definitions, community restoration means moving the current composition and structure of a plant community to a composition and structure that more closely resembles that of the presettlement vegetation.

DNR Silviculture and Forest Aesthetics Handbook: Silviculture is the practice of controlling forest composition, structure, and growth to maintain and enhance the forest using a unified, systematic approach. The management recommendations are basic guidelines intended to encourage vigor within all developmental stages of a forest, whether managed in an even-age or uneven-age system. The practice of silviculture is an art and a science which recognizes the specific ecological capabilities and characteristics of the site for both short-term and long-term impacts. Integrated resource management objectives, such as aesthetics, wildlife, endangered resources, biological diversity, timber production, and the protection of soil and water quality are part of this system.

DNR Old Growth and Old Forests Handbook: These management recommendations provide basic, adaptive guidelines based on research and general scientific and silvicultural knowledge of the species being managed. The recommendations are subject to purposeful, on-the-ground modification by the land manager. Old growth forests are rare in Wisconsin and are valued for many ecological, social, and economic purposes. Current forests will change with time, and can provide an opportunity to restore old growth forests at the stand level, and in some places at a landscape scale. The Department of Natural Resources formally recognized and encouraged the management of old growth forests in Wisconsin's Biodiversity as a Management Issue. Wisconsin's state land master planning process, formalized in Chapter NR 44, Wis. Adm. Code, includes old growth forest as a critical consideration.

Driftless Area: The unglaciated area of southwestern Wisconsin, southeastern Minnesota, and northeastern Iowa generally characteristic of a steep "ridge and coulee" topography.

Extended Rotation Stands: Stands that can be either even or uneven aged. They are managed well beyond the economic rotation to capture ecological benefits associated with mature forests. These stands are carried beyond their normal economic rotation age and are harvested before reaching pathological decline.

Forest Cover Type: A category of forest usually defined by its vegetation, particularly its dominant vegetation as based on percentage cover of trees.

Forest Structure: A category of forest usually defined by its vegetation, particularly its dominant vegetation as based on percentage cover of trees.

Invasive Species: These species have the ability to invade natural systems and proliferate, often dominating a community to the detriment and sometimes the exclusion of native species. Invasive species can alter natural ecological processes by reducing the interactions of many species to the interaction of only a few species.

GLOSSARY OF TERMS

Managed Old Forest: Designated forests (relict, old growth, or old forests) where future active management is limited, and the primary management goal is the long-term development and maintenance of some old growth or old forest ecological attributes within environments where limited management practices and product extraction are allowed.

Managed Old Growth: The primary management goal is the long-term development and maintenance of old growth characteristics within environments where limited but active land management, including logging is allowed. Practices which could be considered include insect control, salvage logging, prescribed fire, and prescribed logging.

Passive Management: A management technique that means the goals of the native community management area are achieved primarily without any direct action. Nature is allowed to determine the composition and structure of the area. For example, patches of large woody debris and the accompanying root boles (tip-up mounds) that are characteristic of old growth structure are best achieved through natural processes. Passive management, however, does not mean a totally hands off approach. Some actions are required by law, such as wildfire suppression, consideration of actions when severe insect and disease outbreaks affect trees, and hazard management of trees along trails and roads. Other actions, such as removal of invasive exotic species, are necessary to maintain the ecological integrity of the site.

State Natural Areas: Tracts of land or water harboring natural features that have escaped most human disturbance and that represent the diversity of Wisconsin's native landscape. They contain outstanding examples of native biotic communities and are often the last refuges in the state for rare and endangered plant and animal species. They may also contain exceptional geological or archaeological features. The finest of the state's natural areas are formally designated as State Natural Areas.

Sustainable Forestry: The practice of managing dynamic forest ecosystems to provide ecological, economic, social, and cultural benefits for present and future generations.

Type 1 Recreational Use Setting: Objective of this setting is to provide a remote, wild area where the recreational user has opportunities to experience solitude, challenge, independence and self-reliance.

Type 2 Recreational Use Setting: Objective of this setting is to provide a remote or somewhat remote area with little development and a predominantly natural-appearing environment offering opportunities for solitude and primitive, non-motorized recreation.

Type 3 Recreational Use Setting: Objective of this setting is to provide readily accessible areas with modest recreational facilities offering opportunities at different times and places for a variety of dispersed recreational uses and experiences.

Type 4 Recreational Use Setting: Objective of this setting is to provide areas offering opportunities for intensive recreational use activities and expectations. Facilities, when present, may provide a relatively high level of user comfort, convenience and environmental protection.

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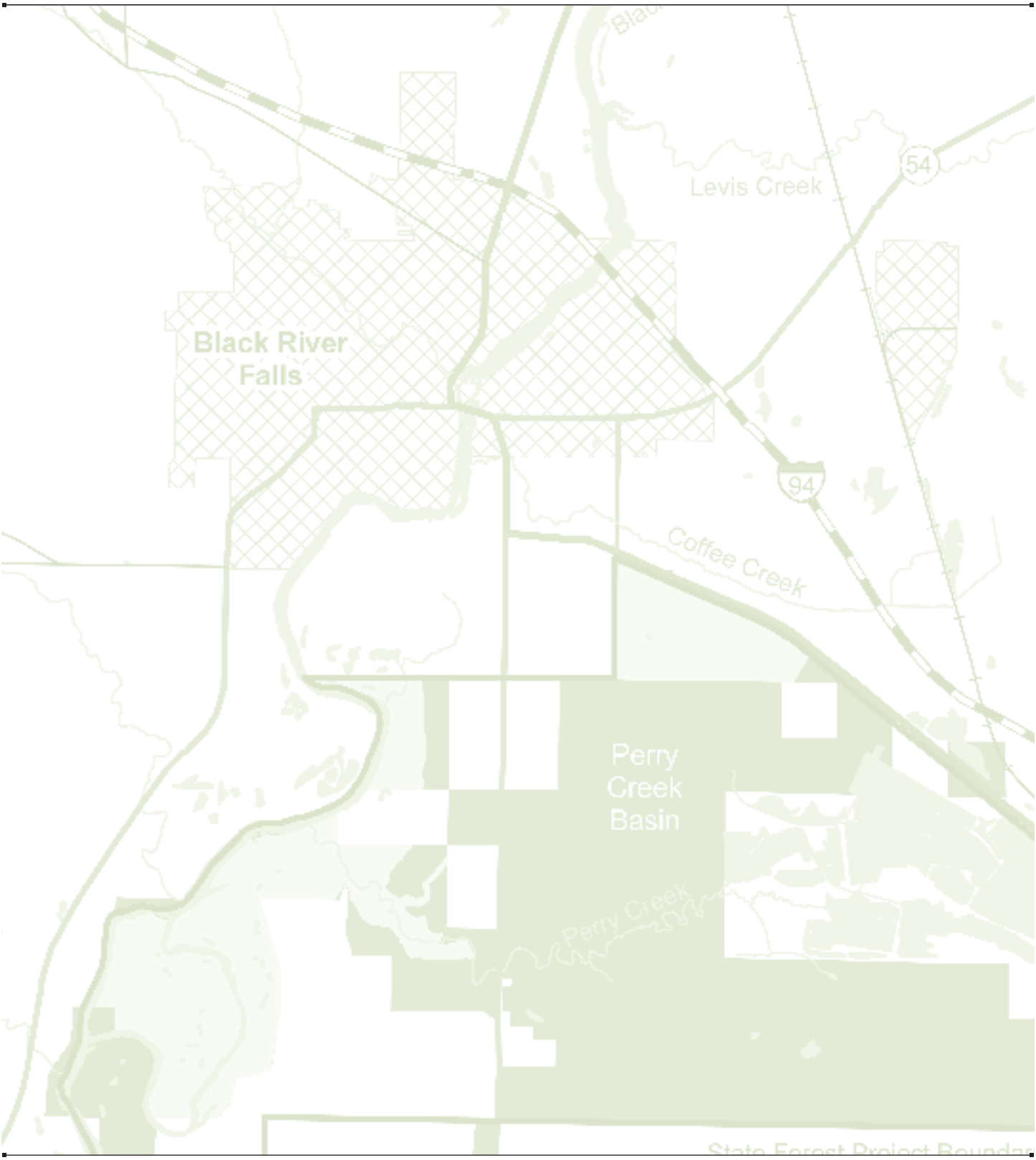

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